

# INDUSTRIAL WORLD

AND NATIONAL ECONOMIST.

DEVOTED TO HOME INDUSTRIES, COMMERCE, FINANCE, INSURANCE, RAILROADS AND MINING

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### TURN OF THE TIDE IN ENGLAND.

It is scarcely worth while to look for so much of protectionist movement in England as shall reverse the policy of thirty years' standing. The interest of England in persuading other countries to adopt Free Trade to a greater or lesser degree, as may seem possible of achievement, is of such vast magnitude that it cannot afford to imperil the force of her persuasions by seeming to have lost faith in them herself. This is the real secret of the strength of Free Trade among English statesmen to-day, on both sides of politics. It is not that, for Free Trade to live and be strong, it must have at least the appearance of being steadily sustained at home. If English advocates of their faces to blanch before the rising storm of demands of foreign National Industry, which they mean for each nation its own National Policy to protect, how can they, as we may say, "show any more?" If they "weaken" on the principle, the principle itself is weakened throughout the world. It is thoroughly consistent, Cobden's doctrine must be adhered to—that any nation gains by giving Free Trade, whether she gets it in return or not. Others refuse to buy cheaply from you, but no matter, still gain by buying cheaply from them, if you will. The interest of the seller is nothing; that of the purchaser is everything, and should control the commercial policy of nations. Such is the prevailing opinion in England, and it has so prevailed as to be adopted by the chiefs of the two political parties actively. On this question a revolution of opinion thirty years ago or more. Gladstone followed Peel in accepting it, after he had opposed it for, say, twenty years. Disraeli accepted it ten or twenty years afterwards, and his latest speech in the House of Commons on the subject asserts that England has taken the lead and cannot go back. Advocates of Protection to-day need no more ask Lord Beaconsfield to lead them than Mr. Gladstone. In a certain sense, or to a certain extent, the question is settled for England. It will not go back to Protection, for the very strong and sensible reason that she would thereby weaken the influence of Free Trade all over the world. We are shown that she had lost faith in her own economic doctrines, and had ceased to practise them, her fabric of Free Trade precisely for the world to tumble like a house of cards. That British industry is no longer the free import of foreign manufactures unquestioned, but against that is placed the fact that Britain still exports twenty shillings' worth of shilling's worth imported. Shall the twenty shilling's worth be jeopardized for the sake of the shilling's worth? This is the question. Public opinion in England is that it must not—that the one shilling interest must be left to fight its way, rather than that the twenty shilling interest should be endangered by a "dig in" on the general question. Once British Free Traders concede the main point, what ground is left for Foreign Free Traders left to stand upon? It is a ground decreed, by a consensus of British statesmen-

ship, on both sides of politics, that Britain has an immensely larger interest in possible Free Trade abroad than in possible Protection at home. It will be as well, therefore, not to look for any near triumph of the reciprocity agitation in England. The interests opposed to any disturbance of the existing system are very strong, and very well organized besides, while the interests seeking reconsideration have no organization at all. But it would be rash to presume that the latter have no chance of obtaining a hearing. The reversal of the British Free Trade system may be deemed an impossibility, but its amendment in important respects is not chimerical. Men are now beginning to make themselves prominent upon the public scene who say that, even if Free Trade be a true policy for Britain, only the half of it is realized, through the adverse policy of other nations. And what they hold is, that the plan should now be tried, not of treating the whole outside world as a probable Free Trade world, soon to be converted to British views, but as a very mixed and variable world indeed, to be dealt with according to circumstances. It is within the limits of probability that British public opinion may after a while declare itself in this fashion. We do honestly think that Free Trade is the best all round—for us, it might be added, *sotto voce*. But we have tried it for over a quarter of a century, and now it appears that foreigners, instead of becoming converted, are less disposed than ever to accept our views. It may be that now circumstances may dictate a reconsideration of the old policy to a certain extent. And although it may be absurd to speak of a revolution of public opinion in England on this question, it does appear as if a reform of considerable importance were in sight. With this prospect it may be as well for us to hold on to what progress we have made in Canada. It is already a certainty that old country opposition to our policy is weakening.

### LETTING THEMSELVES DOWN EASILY.

The New York World refers in a leading article to Mr. Whitcomb's report upon Professor Hix's charges. It says: "Sir CHARLES DIXIE, the Under Foreign Secretary, said in the House of Commons the other day that the British Government had referred Professor Hix's charges respecting the alleged forged and falsified statistics used before the Halifax Fishery Commission to the Dominion Government, and that the Foreign Office did not consider them 'worthy of serious attention.' The reference of these charges to Ottawa is easily understood. The Foreign Office was represented before the Commission by Mr. CLARE FORD, who acted as agent of the British case, and Mr. BARON, who discharged the nominal duties of secretary of the tribunal; but it was notorious that these officials were simply figure-heads, and that the actual manager of the British case was Mr. WHITCOMB, Commissioner of Fisheries at Ottawa, assisted by Mr. DODD, Mr. THOMSON, Mr. DAVIS and other counsel. In fact the gentlemen of the Foreign Office took no active part whatever in the conduct of the case, and knew little or nothing of its merits, although both shared in the honours and emoluments distributed by the British and Canadian Governments when the verdict was won from M. DUBOIS. Under these circumstances the Foreign Office was in a measure compelled to send Mr. HIX and his formidable indictment to Ottawa, where, if his charges were true, the figures were forged, the statistics cooked and the plot for befogging Judge Foster and beguiling M. DUBOIS laid and consummated." The World finds it inconsistent that Sir CHARLES DIXIE should consider these charges unworthy of serious attention, when the Canadian Fishery Commissioner was asked to refute them. We think this apparent inconsistency can be readily explained. Sir CHARLES DIXIE's statement evidently has reference to that part of the charges affecting the table of fishery statistics, which he very properly considers groundless and incredible. An able journal like the World cannot help perceiving that an erroneous table, based on original returns which were falsified and discussed, could not possibly influence the matter. But when it is considered that the errors it contained were favourable to the American side, and therefore unfavourable to the British case, what possibility exists that, in the words of our contemporary, "they were deliberately committed with the intent of cozening the United States?" Professor Hix's idea to use the errors in both ways. Mr. WHITCOMB points out the palpable absurdity of supposing that anything fraudulent could be connected with these errors. The charge refutes itself. Doubtless this was the view taken by Sir CHARLES DIXIE. Professor Hix's chief accusations apply to the statistics of trade, in which discrepancies exist that he tortures into "fraud and forgery." This part of his

formidable indictment was at the time probably unknown to the Under Secretary. The fact of these differences being common to both the Canadian and United States returns, which were used interchangeably, ought to satisfy the World that any deception was simply impossible. It is clearly proved by Mr. WHITCOMB's report that no purpose whatever could be served by such "falsifications" as Professor Hix alleges. If, however, as we have said before on a former occasion, the United States authorities think these charges deserve more serious attention, by all means let them be investigated. Congress has published them at length in the pages of the Congressional Record, and presumably accepts the responsibility of either proving or disproving them. The professor's voluminous papers were laid before the Canadian Parliament, and were not considered worthy of being printed. We would cheerfully transfer the whole record to our neighbours.

### THE IRON INDUSTRY IN ITALY.

The following statement respecting the iron industry in Italy, from the *Iron and Coal Trades Review*, will be perused with interest. "The Italian Government are offering to let on lease for three years the iron mines in the Isle of Elba, as well as the works of Follonica, Cecina and Valpiana. Offers were to be made recently at Rome, Leghorn and Genoa. The security in the first instance is 300,000 lire, while the final will be 1,500,000 lire. The concessionaire will have to pay a royalty of so much per ton on the mineral exported from the Isles of Elba or Giglio, and on that utilized in these islands. In any case this royalty, which will be payable half yearly, will not be less than 500,000 lire per annum. The exports shall not exceed 200,000 tons per annum. The following is the maximum quantities yearly to be extracted from each mine: Rio Mine, 15,000 tons; Vigneria, 20,000 tons; Rio Albano, 30,000 tons; Terra Nera and Capoliviano, 15,000 tons; and the Calamita and other mines, 20,000 tons. In order to encourage native industry the price to home manufacturers shall be 10 per cent. less than that charged to other countries. The following return of the production and exports of iron ore from the Isle of Elba will be interesting:—

Year	Production. Tons.	Exports. Tons.
1851-52	22,014	22,563
1852-53	39,060	25,994
1853-54	62,968	48,262
1854-55	64,807	60,530
1855-56	60,625	61,418
1856-57	68,494	72,875
1857-58	61,329	60,279
1858-59	56,883	44,010
1859-60	38,487	35,690
1860-61	40,687	51,449
1861-62	63,548	67,739
1862-63	90,447	100,572
1863-64	98,468	101,625
1864-65	104,678	114,484
1865-66	110,467	98,417
1866-67	82,867	72,584
1867-68	64,550	60,047
1868-69	58,713	55,077
1869-70	53,458	60,162
1870-71	50,802	47,765
1871-72	120,046	127,187
1872-73	201,091	173,573
1873-74	223,138	219,153
1874-75	194,374	174,617
1875-76	197,540	202,912
1876-77	196,220	182,845
1877-78	155,155	180,740
1878-79	172,177	202,966
1879-80	274,323	297,663

The production during the last 29 years has thus been 3,027,158 tons, of which 1,999,793 tons were raised from the Rio Mine, 360,065 tons from the Vigneria, 206,761 tons from the Rio Albano, 235,557 tons from the Terra Nera, and 164,979 tons from the Calamita. Of the quantity raised 1,489,642 tons were ordinary ore, 1,506,082 tons washed ore. From 1752 to 1801, and from 1819 to 1851, the exports amounted to 1,189,816 tons, or an average of 14,335 tons per annum. Estimating the exports between 1802 and 1818, for which there are no returns, as being equal to this, the total quantity shipped from 1752 to 1851 was 1,433,500 tons, consisting principally of Rio ore. The price of the ore to national works, which was 15 2/4 fr. per ton in 1851-52, rose to 15 1/4 fr. in 1853-54, but fell to 8 2/8 fr. in 1876-77, and advanced to 12 1/8 fr. in 1875-76, while in 1879-80 it was 12 1/7 fr. When sold abroad in France 11 fr. per ton was asked in 1851-52, but fell to 6 2/3 fr. in 1869-70, while in 1873-74 it rose to 13 3/5 fr., a price which it has since nearly maintained. When sold to English consumers 8 2/5 fr. was paid in 1855-56, 5 fr. in 1859-60, 21 3/5 fr. in 1873-74, since which time it has gradually fallen to 8 3/5 fr. in 1879-80. The average cost of raising was 6 1/8 fr. per ton in 1851-52, and during the last ten years it has been 18 1/2, 2 60 fr.

1872 2 50 fr. 1873 2 58 fr. 1874 3 23 fr. 1875 3 56 fr. 1876 3 50 fr. 1877 1 1/2 fr. 1878 4 51 fr. 1879 4 79 fr. 1880 3 28 fr. The net profits of the mines and of the foundries of Toscana reported by the Administration to have been 2,000,000 fr. in 1879-80. The following are analyses of the ores:—

	Large.	Medium.	Small.
Peroxyde of Iron	410	81 2/5	81 2/5
Silica	11 60	4 70	11 00
Alumina	1 50	1 25	1 75
Lime	traces	traces	0 85
Loss by Calcination	4 00	2 25	6 00
Sulphur	0 00	?	0 12
	100 00	89 15	90 92

The railway rolling stock works of Mac-see Rollin & Co., at Savignano, have received an order for 600 waggons for the Upper Italian railways. These works have been exceedingly well occupied, and have recently received contracts which will keep them going for a long time.

### "HOG CHOLERA."

Not long ago the British Vice-Consul at Chicago made this announcement: that during the year 1880 there were 700,000 head of swine lost in the State of Illinois through the disease known as "Hog Cholera." This statement raised a great outcry amongst those interested in the pork trade, and a doubt was thrown upon the correctness of Mr. WARRACK's figures; but the press and various Board of Trades questioned their correctness. That gentleman, however, furnished Sir EDWARD THORNTON, the British Minister at Washington, with the grounds for and authority on which he founded his statement, being nothing less than the returns made by officials of the State of Illinois, to whose representations, Sir EDWARD says, he had a right to give faith. The matter has been communicated to the United States Secretary of State, and the British Minister emphasizes the whole by stating that the statements sworn to have been fully justified by the officials' returns. Mr. BLAIR, United States Secretary of State, had previously telegraphed to American Ministers and representatives abroad that the statement was without foundation. It only now remains to be seen whether he will supplement his despatches with the real facts of the case.

### CUSTOMS SEIZURES.

We are informed that the Customs Department recently confiscated a quantity of goods imported by a Toronto firm, who were charged with undervaluation and making out false invoices. In addition to the confiscation the parties were compelled to pay the full amount of duty and a heavy fine in addition. A similar offence has been discovered in London, Ontario, and the case is now under consideration. From what we learn the confiscation of a large quantity of English and American importations will be the result. We understand the Department is enforcing the clause of the law which imposes a fine of three times the value of the goods seized. This, with the costs of a suit in the Exchequer Court, before which such cases go, should have a detrimental effect upon merchants of smuggling proclivities.

### PROGRESS IN JAPAN.

Japan is steadily marching along the road of progress. The *Contemporary Review* points out that in 1871 the European system of postage was introduced. Prior to that time, it says, there did not exist any national system of postage, owing to the feudal disposition of the country. If anyone would wish to realize the primitive condition of the Post Office Service in 1863 they may turn to a picture in the "Capital of the Tycoon," of a postman in native costume—that is with a loin band only, to leave his limbs free, running along the road at high speed, and a small box slung by a pole over his shoulders; and, in case of his falling lame or other accident, he is accompanied by a double, to take on the package in his place to the next stage. The Government used to dispatch such messengers, and occasionally private firms. The comparison with what now exists carries us back many centuries, though only the work of five years. There are now mail routes of more than 30,000 miles in active operation, and 601 post offices, besides 124 receiving agencies, 838 stamp agencies, and 703 letter boxes. The number of letters forwarded in 1876 was 36,000,000, being an increase of 64 per cent. over that of 1874, according to Mr. MORSE's "Report on the Finance of Japan." The postage of an ordinary letter in the large towns is one cent (1/10) and two cents (2/10) for the rest of the empire. Post cards are carried for one-half these charges. And in 1875 a money order system was adopted, and within two years there were 310 post

offices where the orders could be obtained and cashed. The American Consul General in his last report represents a state of progress which is highly gratifying. The prejudice which has existed for centuries against the outside world is rapidly dying out. The Japanese are studying the systems of government and the customs of European nations, and their civilization is being gradually introduced. From missionaries, too, we have similar reports regarding the progress of the country.

POST OFFICE SAVINGS BANKS

Leading American journals are demanding the introduction of the British Post Office Savings Bank system, which has been so successful in the United Kingdom and in Canada. Our neighbours across the line are justly celebrated for their enterprise—go-ahead-activeness, as they themselves would say, and therefore it is surprising that the Post Office Savings Bank system has not been adopted by their Government before this time. To illustrate the popularity of the most recent legislation on the subject it is pointed out that the new British Act, which came into operation on the 15th November last, authorizing the deposit of one shilling's worth of postage stamps in the Post Office Savings Banks has already been very successful. Within three months 131,000 new accounts had been opened. The average value of the deposits was two shillings and sixpence. The scheme to encourage investment in Government stocks, which also went into operation in November, has been very successful, no less a sum than £230,087 having been invested within the period named. The Post Office Savings Bank system under the control of the Government has done much in the encouragement of habits of thrift and economy among the industrial classes, both in the United Kingdom and Canada. Doubtless at an early day the system will be one of the institutions of the United States.

"OUR INDUSTRIES."

The following article is from a strong opponent of the policy now in operation. We refer to the Montreal Herald: "The return of prosperity throughout the world has had the effect of sending along with greater rapidity than ever the several iron foundries in our city. Nearly every one of them is at present working full time and with increased hands. A representative of the Herald, a few days ago, paid a visit to the extensive establishment of Messrs. H. R. Ives & Co., who have been in existence since 1839, as manufacturers of builders' and house furnishing hardware, iron railings, and general furnishing work. The works extend from King to Queen streets, taking up an entire block in front, and run back through Prince to Duke streets, and cover an area of 80,000 square feet. The extensive offices and warehouse are connected with the foundry and workshops by an ornamental iron bridge, which runs across Queen street, and is a marked feature of the works. The workshops on the west side comprise a four story brick building and a three story iron front building, in which are suitable and special machinery for finishing the great variety of iron work made by this firm, such as hardware, iron railings, iron bedsteads, etc. On the first floor are to be found the engine and boiler which furnish the motive power, also heavy grinding and polishing machines for producing the new famous 'Mrs. Pott's Cold Handle Smoothing and Polishing Irons,' and iron bedstead department and Japan rooms with steam ovens for baking the Japan. Behind these shops, and extending to Prince Street, is the large foundry, alive with busy workers. The foundry is 180x100 feet, and is complete in every essential, and is at the present fully employed in filling orders. Here can be seen the three large cupolas for melting the iron, the cranes for assisting the workmen in moving the heavy and light castings, etc., every facility being at hand for putting through with despatch and comfort the variety of work to be done. Under the firm name of Ives & Allen this concern won a high reputation in its past, which is still maintained, for making very superior castings, which castings were only previously manufactured in the United States. Last summer the firm, with their usual enterprise, added a new line to their business in the manufacture of 'American chilled mould board ploughs,' some two thousand of which were made to order for a western dealer. Returning to the warehouse, which is of four stories, we enter the first flat, in which are the large and commodious offices of the firm and storage room for heavy goods. On the second flat are arranged the sample rooms, which are filled with samples of shelf hardware, everything looking clean and bright, and of the best workmanship and design. On the third flat are also to be found all kinds of miscellaneous hardware, such as knobs, bolts, bed castors, etc., put together and riveted. The rear portion of this flat is also used for the storing of stock. The fourth flat is occupied by the Canada Wire Company, of which Mr. Ives is the President and manager. Here can be seen ingenious and complicated machines for making the 'Burnell Four Point Barb Galvanized Steel Wire Fencing,' which is coming into general use, and being shipped all over the Dominion, especially to the North-West, and also to foreign countries. We were informed that the Grand Trunk railway during last summer used over 100 tons of this wire for fencing, and find it most suitable for the purpose. They intend using it altogether. Architectural iron work is made a speciality. A portion of the extensive premises on King street is used for the grinding and polishing of ploughs, and the rest is occupied by Miller Bros. & Mitchell as machinists and manufacturers. There is a busy 'hum' going on all round, and the smiling faces of the men is proof of their contentment, not only with good times, but also with the liberality of their employer, Mr. Ives. There are between 200 and 300 men employed in these works, and we had every assurance from the proprietors that business was improving in their line. The establishment is well worth visiting by those interested in the growth of our manufacturing industries."

The Pall Mall Gazette of the 16th inst. says: "The arrivals of live stock and fresh meat at Liverpool from the United States and Canada last week show a very large increase on those of the preceding week, the totals being, 733 cattle, 340 sheep, 8,988 quarters of beef, 2,275 carcasses of mutton and 1,477 pigs."

EDITORIAL COMMENTS.

On Monday of next week the work of taking the census in Canada will commence. Lord Bacon's remark has been very well and for some time hopes of his recovery were not entertained. He is reported somewhat better.

On Friday of last week Mr. Crozier was elected to the House of Commons as the representative of East Northumberland, Mr. Keir succeeded and in Carleton Place New Brunswick on Wednesday Mr. Evans was elected and Mr. Crozier deceased.

The recent United States census shows that of the 50,152,882 inhabitants of that country 25,520,582 were males and 24,632,294 females. In thirty States and Territories the males are more numerous and in seventeen the females are in the numerical ascendancy.

A cable despatch announces the publication of Mayor Evelyn Baring's financial statement for India, from which it appears that the deficit for the year 1879-80 amounted to £1,183,000. Had it not been for the expenditure connected with the Afghan war there would have been a surplus of £4,607,000. The deficit for the current year is estimated at £2,269,000.

The New York Daily Indicator urges the improvement of the Erie Canal, pointing out in that connection that "extensive improvements are also being made in the comprehensive system of canals in Canada that threaten to direct, through the force of low rates and quick transit, no inconsiderable share of the grain trade of the North-West to Montreal and the St. Lawrence."

Jewellery, to the amount of some \$1,400, was seized some time ago from one Stein, of Brumal, of Toronto, for an infringement of the Customs laws. The goods were examined by the Excise Court, and a decision was given a few days ago condemning the whole confiscation. The Department is now efficiently managed. Evil does must pay the penalty of their attempts to defraud the revenue.

The St. John, N.B. papers contain accounts of the opening of the Bolt and Nut Company's factory. The building cost \$10,000. The capital stock is fixed at \$30,000. \$20,000 have been subscribed and paid up. At present, it is stated, the company's business will be limited to the heavier classes of work, such as railway track and bridge bolts, lag screws, fish plates, and other heavy work, but in time it is expected to add machinery to make carriage bolts and nuts for light work. Score another for the National Policy.

According to a return recently laid before Parliament the aggregate expenses of the candidates who contested British constituencies at the last general election amounted to over £1,737,300 sterling. This sum shows an increase of £750,000 over the expenses of the general election of 1874. In England and Wales the sum expended was £758,750 for the counties, and £681,700 for the cities and boroughs, Ireland, total, £98,640; and Scotland, £198,210. These figures represent only legitimate expenses. In addition to the sums named millions were spent on both sides in purchasing votes and otherwise corrupting the electorate.

In a favourable article on the Canadian Pacific Railway, on the 17th inst. The Liverpool Mercury says: "It, among other things, will revive the hopes of British Columbia by realizing one of the inducements which led that territory to enter the Dominion of Canada, namely, the promise of the construction of this very railway through it by the close of the present year. It is not surprising to be informed that all over the country the Canadians are counting on the opening of this line as the signal for a great emigration to the Dominion; while, if it be constructed on the colossal scale we have indicated, it must favourably affect a large number of industries, both British and American, for the next ten years."

A recent despatch from St. John, N.B., stated that the British Privy Council had decided against that city in the appeal case of the branch banks, which objected to paying taxes on income, holding that they were only liable to pay on net profits. The city would lose \$17,000, besides costs of court, by this decision. It will be remembered that the case of the Bank of British North America vs. the City of St. John came before the Supreme Court here last year, when four of their Lordships confirmed a judgment given by the Superior Court of New Brunswick in favour of the city, Justice Henry dissenting. The case was then taken to the Imperial Privy Council, the judgment of the Supreme Court being reversed, as above set forth.

We read as follows in the Pall Mall Gazette: "Protection continues triumphant in Canada. On Thursday last Mr. Edward Blake's Free Trade motion in the Dominion House of Commons was lost by 131 votes to 55. Perhaps that is the best thing that could have happened. Canada has not enjoyed the perilous blessings of a protective tariff long enough to have a thorough hatred of the system burnt into the hearts of the people. A good harvest or two in Europe might help to quicken her political intelligence." The motion referred to is that moved by Mr. Blake on the 10th of March, in amendment to the motion

to go to Committee of Supply. It is, not, as our London contemporary remarks, a Free Trade motion. In the strict sense of the term. But the nature of the motion itself, in the Pall Mall Gazette thinks Canada is going to abandon the policy inaugurated in 1857, is very much mistaken.

An anti-tenant rabble league has been formed in New York. A meeting was held in that city on Friday evening for the purpose of considering what action should be taken in view of the fact that rents were to be increased. Some strong Communist talk was indulged in. A Mr. Gustav Marchal said that society might be divided into two classes, robbers and those of whom they robbed—the capitalists and the labourers. A Mr. Walker remarked that it was natural that landlords should try to squeeze as much as possible out of their tenants, but it was also natural that the tenants should fight their oppressors. A committee composed of twenty-one persons, was selected to devise means for resisting the demands of the landlords. It was agreed that on the first of May tenants should refuse to pay rents, if raised.

Messrs Allan & White, of Chicago, have prepared a table showing the average yield in the principal grain producing countries of the world, from which we call the following figures: United States, 400,000,000; France, 200,000,000; Russia, 230,000,000; Germany, 125,000,000; Spain, 110,000,000; Italy, 111,000,000; Canada, 17,000,000; Egypt, 17,000; Roumania, 31,000,000; Austria-Hungary, 105,000,000; Great Britain, 104,000,000; Turkey in Europe, 43,000,000; Belgium, 24,000,000; Algiers, 20,000,000; Australia, 18,000,000. And the same authorities point out that among the above named countries the United States, Austria-Hungary, Turkey, Australia, Canada, Algiers and Egypt have a surplus for export. France, Germany and Spain in an average year raise sufficient for home consumption. Great Britain usually imports about 100,000,000 bushels. The wheat crop of the United Kingdom has decreased nearly 1,800,000 acres, or one-fourth of its area, within the past ten years. In 1880 Australia had about 260,000 acres sown to wheat, being twice the area sown some years ago, and France had sown in wheat about 17,500,000 acres.

A number of farmers living in the township of York recently held a meeting in the Masonic Hall, Eglinton. They were addressed by Dr. Scheldtweiler, who referred to the growth of the sugar beet root. He said that where the soil was adapted to the growth of that root from 25 to 60 tons per acre could be raised. The doctor was of the opinion that a good deal of the land throughout the township would answer the purpose, and urged on the farmers to give it a trial. He was considering the advisability of establishing a sugar refinery in the township, and if he did so he would require about 60,000 tons of sugar beet per annum. The refinery, he said, would give employment to 400 workmen, and he, no doubt, would purchase a large quantity of land near the establishment whereon to erect dwellings for his workmen. When fitted up for the manufacture of sugar, the building would cost \$300,000. He promised to supply the farmers with seed the first season, and if it could be grown to advantage he thought that there would be no difficulty in having a refinery built, possibly at Eglinton. Several of the farmers present expressed their willingness to give the experiment a trial.—Mail

Messrs. Chown & Cunningham have commenced to make the improvements in their foundry, corner of Queen and King streets. The capacity of the whole establishment is to be enlarged fully one-third, at a cost of something over \$6,000. The improvements to be made to each department are as follows: The fitting shop is to have an addition of 75 feet square, a portion of which will be used as a show room. The moulding shop is to be enlarged to twice its present capacity, an entirely new blacksmith shop will be built, and the carpenter shop somewhat altered. The work of enlarging is expected to be completed about the first of August, when a large number of men will be employed. At present there are sixty men employed in the foundry, but before the summer closes this number will have been increased to 100 or more. It is proposed to increase the number of lines of stoves manufactured, and take in cooking ranges, etc. The average output of stoves per week will be increased to 90. Messrs. Chown & Cunningham have not been so busy for a number of years as they have been this spring, the orders coming in as fast as they can be filled. It was usual to shut down during a portion of the year, but this year work will proceed right through.—Kingston News.

CANADA'S MANUFACTURES.

The Cornwall Reporter says that the pay roll of the Stormont Cotton Company, when the extension of the mill is completed, will embrace about seven hundred names. The Maritime Agricultural Implement factory is to be established at Hantsport instead of Windsor. This is an entirely new branch of industry in the Maritime Provinces. The capital to be employed is \$150,000.—Moncton Times. The Chatham, N.B., North Star announces the arrival of the Jessy (of Bristol (G.B.), from Arctibo, P. R., 24 days, with a cargo of 400 hogheads of sugar (257 tons) for the Nova Scotia Sugar Refining Company. The contract for the erection of the Campbellford Woolen Mills was during the past week awarded to

Mr. Thomas Russell, of Morrisburg. The plans for the erection of the factory, dwelling house and manager's residence, the whole completed by the 1st of August next. The cost will be the vicinity of \$20,000.

Several handsome new freight cars for the Central Railway have recently arrived from the Ontario Car Works, London, where they were constructed. They were built specially for the transportation of iron ore and are of 40,000 pounds capacity, and of them came into the yard this morning.

Messrs. Wm. Finley, W. D. McKay, W. J. McLean, and T. A. McLean, ask the Legislature to incorporate the Charlottetown Woolen Company for the purpose of manufacturing woollen goods. Messrs. C. A. Hyndman, L. H. Davies, J. R. B. and W. Hyndman, asking for the incorporation of a P. K. Island Pottery Company.

The St. John N.B. Daily News says: The vessel forwarding the sugar from the ship Atlantic, at the Ballast Wharf to the Moncton Refinery via Intercolonial Railway, is proceeding rapidly. Forty carloads have now been despatched and fifty carloads are to be sent. The vessel had all told 860 tons of Bute sugar aboard, packed in casks or baskets, weighing about 675 lbs. each.

The agricultural works of Mr. Simpson Mermer, one of the institutions of New Hamburg, and one of the most flourishing of the kind in this part of the country. Mr. Mermer largely devotes himself to specialties, such as the New Hamburg Reaper, the Duffin Mower, the Hamburg Self Dumping Harrow, and the Oliver Patent Chilled Plough, all of which have an enviable reputation and are in great demand. In addition to this, he also carries on a commission business in the general supply of agricultural machinery and implements. In the counties of Waterloo, Perth and Oxford the Hamburg agricultural works have a very extensive business, and shipments to distant parts of Canada are not uncommon.—Guelph Reformer.

Mr. Main's flouring mills at Victoria, Pictou County, are running night and day. Mr. Main keeps a fine class article of flour from home grown wheat constantly on hand, in which he can give better value than can be had from the imported. Now that our farmers are going into wheat growing and it has been proved that flour from home grown wheat is quite as wholesome as any other, it would be no more than fair that the merchants in the towns and cities should ascertain what demand there is for it by keeping it on sale and advertising it. Mr. Main also keeps ground buckwheat on hand and for sale. He is an enterprising gentleman and is deserving of all encouragement.—Moncton Times.

The establishment of a brush factory at Portsmouth is being discussed by residents of that place. Mr. H. P. Lindsay, who had a factory of this kind some time ago, but which was purchased and taken to Napanee some time ago, is the leading spirit in the movement. For some time Mr. Lindsay was manager of the brush factory at Napanee, and is therefore a practical man. He is of the opinion that about \$10,000 would be all that was required. A meeting was held last night of several gentlemen, all of whom seemed anxious to see the contemplated project go ahead. The names mentioned in connection therewith are Messrs. H. P. Lindsay, H. Dods, H. A. Betts, and A. Cameron. It is to be hoped the affair will have a successful issue.—Kingston News.

NEW BRUNSWICK LUMBER PROSPECTS.

In the course of a few weeks all the saw mills around the mouth of the river St. John will have commenced the season's sawing. By next week of the week following, and upon the first arrival of logs from up river, several of them will be running. When so many men were going to the woods last fall there was a prospect of a very heavy season's sawing this year, but the state of the English and American markets is not nearly so reassuring now as then, and the bright prospect of last autumn has become considerably shaded. The spring season having commenced a month earlier than usual the lumbermen have had a shorter time in the woods than was anticipated they would, and consequently the number of trees felled is not nearly as large as anticipated. The present indications are that the froshet will not be so good for bringing the logs down as would be desired. Still there seems no reason to doubt but a very much larger amount of lumber will be cut during the coming season than was sawed last year, and more than for several years past. To ascertain what extent is likely to do this year, and also the feeling of manufacturers on the lumber outlook, a Globe reporter sent each firm a call, with the following results: Messrs. Randolph & Baker's mill, Green Head will commence sawing next Monday. Mr. Baker informed the reporter that they had sawed as much as 22,000 feet of lumber in their mill last year, and calculated on doing a little better than that this year, if possible. Last year they sawed spruce lumber for the English, French and Australian markets, and they will probably saw for the same markets this year, though principally for the English market. Their lumber is already largely contracted for. Mr. S. T. King, of Messrs. S. T. King & Sons, whose mill is at Mosquito Cove, stated that he considered the prospect rather dull for the season, and not nearly so good as six weeks ago. "I have not the slightest idea what we will cut this year," at all depends upon the market," said he. "If I cannot turn over a new dollar for an old one, I will shut the mill down." He said that 1,000,000 feet of lumber went into New York from Portland, Me., last week, and he was afraid that by rushing stock upon the market that way the effect can only be to break the market down. Mr. Alex. Barahill's mills, opposite Indiantown, will be ready to start as soon as the up river logs are down. Mr. B. stated that he would cut from 6,000,000 to 7,000,000 feet this season for the English market. His stock has mostly all been contracted for.

Mr. J. Woodman's mill at Spur's Cove... We have not the slightest...

Mr. Bunhill, of Messrs. Barnhill & Murray, stated... that their mill at the Falls will be running shortly...

Mr. C. Hamilton & Co's mill, Straight Shore, is preparing to start when logs arrive... Mr. Charles Hamilton said that as they cut for the American market...

Mr. R. A. Gregory will start his mill in Carleton... about a fortnight. He has a contract for the season's...

Mr. C. A. Salter's mill, Carleton, is undergoing extensive repairs... a rotary feed in connection with the...

Mr. Messrs. Clark Bros., Carleton, will start as soon as possible... as soon as logs arrive. Mr. G. H. Clark was of the opinion...

Among the products of Canada now engaging the attention of capitalists in England is copper ore...

OFFICIAL ANNOUNCEMENTS. The Canada Gazette, of Saturday, contains the following: Mr. Wm. J. Taylor, of Sheffield, to be a Census Commissioner...

Table with 3 columns: Produce of other countries, Total, and another column. Rows include Total dutiable goods, Free goods, and Grand total entered for consumption.

Monthly statement of goods exported from the Dominion of Canada (exclusive of British Columbia) for February, 1881:—

Table with 3 columns: Produce of Canada, Produce of other countries, Total. Rows include Produce of the mine, Produce of the fisheries, Produce of the forest, Agricultural products, Manufactures, Miscellaneous articles, and Grand total.

THE PRINCESS LOUISE AT GENOA.

Her Royal Highness Princess Louise, Marchioness of Lorne (travelling as Lady de Sandridge) arrived at Genoa on Saturday last, and witnessed from the windows of the Royal Palace, Via Balbi, on Sunday afternoon the beautiful procession of the "Return from the Crusades," which was to have taken place during the Carnival...

RAW FURS AND SKINS.

The demand for all kinds of raw furs and skins during the past month has been very active, and has only been restricted by the light stocks on hand. Transactions would have been very heavy had the stocks been at all adequate...

The Cape Pit, St. Lawrence, is still on ice. The Montreal Great Exhibition this year will commence on September 14th.

Mr. J. Gerald, Collector of Inland Revenue, Brantford has been appointed Collector of Inland Revenue for London, and Mr. Thomas Alexander, of London, has been appointed Collector for Brantford.

The elevator storage capacity of the port of Buffalo for the coming season will amount to 9,000,000 bushels. The mammoth elevator Niagara, holding 1,000,000 is included in this estimate...

A Collingwood despatch says the steam barge Isaac Vay and barge Severn, reported to have gone to pieces, and were a total loss, on the rocks at Bygoness, where these craft last fall went ashore...

M. Henri Desqueres has conceived the good idea of submitting hypotheses regarding the nature of ozone to the test furnished by the magnetic properties of that substance. He finds that ozone is considerably more magnetic than it would be if it resulted simply from the mechanical condensation...

The receipts at the Halifax Custom House in March amounted to \$151,282, an increase compared with the receipts for the same month of last year of \$47,337. The receipts for the quarter ending the 31st of March were \$242,129, an increase over receipts during the corresponding period of last year of \$46,930.

Professor Brugsch has published an elaborate report upon the opening up of two of the pyramids at the boundary of the Libyan desert, near Bahkara. At the close of 1880 the entrances to the sepulchral chambers of the three pyramids were laid bare...

The production of anthracite pig iron in 1880 showed a large increase over 1879. Comparative figures for the two years are as follows: Production in 1879, 1,273,024 net tons; in 1880, 1,807,651 tons; increase in 1880, 534,627 tons.

Monsieur St. Paul Lias, a French agent, who is in Athens under the auspices of the Geographical Society of Paris, has completed his explorations, and may be expected back this month. The London and China Telegraph understands that he intends forming a Société Anonyme, for the purpose of planting and other operations in Athens.

St. Catharines 31st.—Owing to the continued severity of the weather, the water will not be drawn out of the canal until April 9th, one week later than the date previously announced. A considerable number of men are now engaged in making repairs to the tow-path and general superstructure...

The material of some of those remarkable structures called vitrified forts found in France and other countries of Europe has been examined by M. Daubrée. He does not think that the same plan of making them was invariably pursued, but he is inclined to believe that the fire was applied within the walls so as to secure a natural draught, which may also have been assisted by a current of forced air.

The Hamilton Custom House business for March was the largest ever transacted here except for February, 1879, when goods were crowded through in anticipation of the tariff, while manufacturing interests here reached a point of prosperity never before attained. The business at the Custom House shows that trade generally is in the same flourishing condition.

A remarkable nugget of platinum, found on land near Plattburgh, New York, has been described by Mr. Collier. It was found to be composed entirely of native platinum and chromite disseminated through it, the chromite being 54 per cent. by weight, and the platinum 46 per cent.

A Hartford (Conn.) concern is manufacturing a railroad station indicator. An ornamental box contains a roll of letters, canvas or other material, giving a list of the stations in their order, and over the opening where they are exhibited is printed, "The next station is." By successively turning the roll of canvas the stations appear in due order, and at each change by a clever contrivance a shrill whistle is blown for the moment, thus attracting the attention of all persons in the car.

Mr. A. F. Bandelier has recently been conducting a series of investigations, under the auspices of the Archaeological Institute of America, into the past and present life of the Indians of New Mexico. Besides much of interest to the anthropologist and student of language, Mr. Bandelier made one curious and novel discovery. In two places, stone enclosures were found outside the pueblos, or collection of huts, containing life sized images of the puma, cut out of solid rock.

Swiss engineers have employed the principle found so useful in coal mines, of drawing up empty cars by the superior weight of loaded cars descending the incline, on a passenger railway at Brienz. From the landing at that place to the plain at the top of the Falls of the Geisbach the road is furnished with two coaches attached to an endless steel rope. In place of an engine to drive this cable, a tank is attached to each coach, to be filled with water at the top and emptied at the bottom, thus ascending empty and descending loaded.

The office seeker is not, as some would have us believe, peculiarly an American institution. He is as numerous and pertinacious in Europe as he is in the United States. Since the appointments to the civil service of Great Britain ceased to be the perquisite of

the nobility and of the Ministers the rush for admission has become very great and is constantly increasing. To obtain a place under the government is said to be the ambition of every French bourgeois, while in Germany and Italy every holding is the most popular of employments. But in European countries, where every field of labour is crowded and expansion has well nigh reached its limit, the office seeker has an excuse which his American colleague cannot offer.

It is sometimes useful to know how to impart a finely ground surface to glass, suitable, say, for a focusing screen. Finely ground sand or river mud—or what is better still, the sediment from a grindstone—is well stirred up in a bowl of water, and after a few minutes the upper half of the liquid is wanted off. The decanted liquid contains all the finer particles, and those, after subsiding, are collected in a watch glass. The sheet of glass is laid on a damp cloth spread upon a table, and the watch glass and mud used as a muller, the convex side of the watch glass supplying a good hold for the fingers. In a quarter of an hour a satin like polish will be obtained, admirably adapted for focusing. A rinse with water will show if the grinding has been uniform.

A clever application of the property which selenium possesses of allowing its conductivity by the access of light has just been devised for regulating the heat of the "muffle" furnace employed in baking stained glass. The selenium is so arranged in the focus of a parabolic reflector placed at some distance from the muffle that a telescope pointed towards the furnace is in a line with it. In circuit with the selenium is a thermopile and an electric bell; but this bell cannot give any alarm until the resistance of the selenium is lowered by the access of light. When the muffle reaches a cherry red heat, its light is conveyed by the telescope to the selenium; its resistance is altered and the bell rings. By a system of levers, the fuel is so diverted from the furnace that the baking process comes to an end.

A foreign newspaper says: "Krupp is now staying at St. Petersburg to arrange for a contract for 3,000,000 roubles, or about £400,000, for the construction of cannon for Russia. On this point there has been a furious discussion in the papers, many affirming that the order ought to be given to native firms. To establish the Abovichoff Steel Works at St. Petersburg £1,000,000 was stunk some years ago, and orders for guns have been repeatedly given to the concern since. But the guns cost twice or three times the amount paid to Krupp, and are very considerably inferior to his. Hence Russia, in spite of her desires, must continue to give her contracts to Krupp for the present. Krupp's visit to St. Petersburg has been taken advantage of by several Finnish railways to give him large orders for steel rails."

In the Local Legislature the Government have introduced a bill, which will on doubt pass, empowering the Lt. Governor in Council to issue debentures in such form as he may approve, bearing interest at a rate not exceeding 6 per cent. per annum, and expressed to be for the bridge service of Nova Scotia. The said debentures shall not exceed \$392,000. The interest on the debentures to be issued shall be payable half yearly and the principle thereof shall be payable by such annual instalments as shall enable the whole to be paid within twenty years from the date of issue of the said debentures. The moneys to be realised from the sale of said debentures shall be placed to the credit of the several counties of the province in the accounts of the provincial cashier, and as accounts shall be kept with each county of the amount which may, from time to time, be paid out of such fund for each county.

A meeting of the board of directors of the Northern and North-Western Railway was held on Wednesday at the offices of the company, Toronto, the president, Hon. Frank Smith in the chair. The annual report was read, showing the gross earnings for the last eighteen months to have been \$18,302,000, and expenditures \$11,222,933. The report was adopted. The gauge of the road will be altered in three divisions, commencing with the first one at the beginning of May next, and will be completed about the first of July. The report of the board at the death of Mr. Gamble was expressed by Mr. Cumberley, and a new code of by laws was adopted. A special meeting of the board Mr. John Langton was appointed auditor for the Northern Railway. The lease with the Hamilton and North-Western was confirmed. The following board of directors were elected: Hon. Frank Smith, Major Greg, William Thompson, N. Barnhart, F. W. Cumberland, William Leblond, William Ford, John Rigby, U. J. Campbell, John Fisher, and J. L. Blake.

The celebrated paleontologist and botanist, Professor Goepfert, of the Breslau University, lately made a journey through Rhineland by the Bergisch Märkische Railway, and from some cause or other the train in which he travelled stopped for a while outside the station at Eilberfeld. Looking through the window he perceived not far from the carriage some dark blocks of stone, which had been recently uncovered by navvies working there, and, believing that he saw something remarkable, he was on the point of leaving his carriage when the train moved on. He, however, afterwards secured the stones which had attracted his attention at Eilberfeld and caused some of them to be sent to Breslau and some to Bonn, on examination it was discovered that they contained a fossil tree of the Arucarites family, which belongs to the Coniferae, and has never yet been detected below the coal measures. The rock which enclosed it belongs to the Upper Devonian of Eilberfeld, from which place it will now bear the name of Arucarites Eilberfeldensis, thus showing that a flora of terrestrial plants must have existed even before the huge bog came into existence, to each of which we now owe a seam of coal in our coal measures.

The investigations of the genus men have led to the discovery of some queer developments in the manufacturing of New York and adjoining cities. The largest single industry in New York is that of custom made clothes. The making of paper patterns employs hundreds of hands, and ten large houses being engaged in it, use tons of paper. There are factories for making dried blood, the dumplings that milliners used to show dresses on, theatrical armour and Jews' haps. The use of adulterating substances is getting to be general. "Castile soap" is made of grease and terra alba, or white earth, and which earth is used largely in candy making. Glucose, which is corn starch, is used heavily by the sugar refiners. There is a firm engaged in making honey and honey comb. The honey comb is made by machinery of paraffine wax, and is an exact imitation of the regular thing, except that the bees fashion their cells of wax only 1-125th of an inch wide, while human artificers have not yet become so deft. The cells are filled with glucose, which is the sweet syrup of common corn, and looks and tastes like honey. The cells, once filled, are closed by ensuring a hot iron plate over the wax tops, and the product is sold as the "best clover honey." It is in great demand, and out-sells the regular honey. Gallons and gallons of the best tomato catsup are made from the tomato skin, which are purchased from the great tomato canning establishments.

SPIRIT OF THE COMMERCIAL AND INDUSTRIAL PRESS.

OUR MINING RESOURCES.

(Mainland, I.C. Guardian)

The information from the neighbourhood of Queen's... a few miles below that town, on the west bank of the Fraser, is a thing to create surprise. These discoveries will be made from time to time long after the present generation has retired from the scene.

BUILDING UP A NATION.

(Chicago Journal of Commerce.)

The wealth of an individual is in what he is producing; the wealth of a nation is in its great number of profitably producing individuals. To make that wealth as great as possible an opportunity should be afforded for the profitable employment of the greatest number of individuals.

It is not a statement, but a fact, that we have presented to us a point blank comparison between two different products of steel rails, supplied to two different parties on that slender thread gauge for the road at kind of conclusion. It is taken for granted, without any further inquiry or surmise whatever, that there are no other elements of the problem than those specified—that there are no modifying or counterbalancing circumstances.

EFFECTS OF PROTECTION ON THE AMERICAN STEEL INDUSTRY.

(Chicago Railway Review.)

A very high Free Trade authority, no less than David A. Wells himself, is officially committed to the same general view we have taken of the cheapening tendency and effect of protective duties. In his report for 1867, as Special Commissioner of the Revenue, he said: "On steel much higher rates of duty than those recommended on iron are submitted."

THE METHOD OF FREE TRADE ARGUMENT.

(Chicago Journal of Commerce.)

Lack of comprehensiveness is the most conspicuous feature of the argumentative method employed by the Free Traders. A few surface indications are arbitrarily taken to represent fully all the elements of the question under examination, and this narrow scope of inquiry is put forward as fair, complete and conclusive.

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abroad at a loss is, however, a chronic ailment of English manufacturers, who are far more dependent upon the foreign market than the manufacturer of any other country. Even so long ago as March 1845, we find Messrs. Duff & Co., a firm of Manchester, England, saying in their petition to their customers on the state of the trade in Lancashire: "Many of our manufactures have experienced a loss, and, if by so doing, they have kept their establishments at bay, and checked the increase of manufacturing establishments abroad, it is an undoubtful fact that still as this country is doomed to be a manufacturing one, nothing remains but to treat or be treated as we were the condition of affairs two years after the repeal of the corn laws by the British Parliament."

THE MINILIST'S CREED.

The "Executive Committee of St Petersburg" has published in the *Narodnyye Voprosy* a code of the Minilists, of which the following is a copy:— A. We are Socialists and champions of the people. We hold that all classes alone can insure to humanity the blessings of liberty, equality and fraternity. We hold that the will of the people can alone enact and achieve the social reforms we contemplate. We hold that the idea of social institutions can prosper if it is based on the people.

TORONTO PRICES CURRENT.

GROCERIES.

Table listing various grocery items such as flour, sugar, coffee, and oils with their respective prices and quantities.

PAINTS, ETC.

Table listing paint products like White Lead, Red Lead, and Yellow Ochre with prices.

PETROLEUM.

Table listing petroleum products such as kerosene and lamp oil.

WOOL.

Table listing wool products and their prices.

HIDES AND SKINS.

Table listing various types of hides and skins.

LEATHER.

Table listing different grades of leather.

PRODUCE.

Table listing various agricultural products like wheat, corn, and beans.

GRAIN.

Table listing different types of grain.

PROVISIONS.

Table listing food provisions like butter, eggs, and meat.

SALT, ETC.

Table listing salt and other miscellaneous items.

SHOES AND SHOES.

Table listing various styles of shoes.

LIQUORS.

Table listing different types of liquor.

IRON WARE.

Table listing iron tools and hardware.

STEEL.

Table listing different grades of steel.

TIN PLATE.

Table listing tin plate products.

DRUGS.

Table listing various medicinal drugs.

GLASS.

Table listing glass products.

WINE.

Table listing different types of wine.

SPICES.

Table listing various spices.

SOAP.

Table listing different brands of soap.

WEEKLY REVIEW.

Toronto March 30th, 1881

Stocks—Market almost stationary, slight advance in some loan companies stocks since last week.

Navigation—There is never much doing at this season of the year, but a good trade is expected soon as navigation opens.

Hardware—There is no change whatever in the market since last week, and business is reported quiet.

Wool—The bottom seems to have dropped clean out of the combing fleece wool market, and dealers are not inclined to handle the grade at any price.

Hides—The market is weak. Prices have dropped a half percent, to butchers. The bulk of the hides now offering are very inferior in quality.

Produce—The flour market remains very quiet, the only demand being for the supply of actual requirements, there being no speculative inquiry whatever.

Leather—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Grain—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Provisions—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Shoes—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Liquors—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Iron Ware—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Steel—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Tin Plate—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Drugs—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Glass—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Wine—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Spices—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

Soap—There has been a fair demand for leather throughout the week, and no quotable alterations have taken place.

THE BRITISH GRAIN TRADE.

London, March 29.—The Mark Lane Express, in its review of the British grain trade during the past week, says: "Notwithstanding the unsettled weather and temperature during the last fortnight, a great deal of sowing has been done, but the season is still late and farmers are anxious; frosty nights and cold winds have slightly affected young wheat. The backwardness, however, is not generally unfavourably regarded on the whole. The wheat acreage, which is small, looks well. English wheats are still in small supply on account of the busy season, but the facilities for threshing have materially improved the condition of samples. Millers' necessities have created a demand for English wheats, and the sale of sound samples consequently was easy. The recent improvement in values was confined solely to best samples; others were practically unsaleable. Foreign wheats at the close lost the greater portion of Monday's advance, a reduction of fully 4d being necessary to effect sales. The attitude of buyers, unmoved by the crop prospects, bare off-coast market or American speculation, continues most reserved and cautious. The large Californian arrivals were readily absorbed, because relatively cheap. The foreign supply at London was more than sufficient. Flour was quiet; since Monday it has been easier in London and the provinces. Foreign flour was similar in tone and in good supply. Barley was quiet and drooping. Foreign barley was dull and easier. British and foreign oats were in slack demand and weaker. Maize was in more plentiful supply and weaker on Friday. The sales of English wheat during the past week were 31,190 qrs, at 43s. 1d, against 21,197 qrs, at 47s. 3d, during the corresponding period last year.

CLASSIFICATION OF STEELS.

The production of numerous special varieties of iron by the open hearth and Bessemer processes has rendered the older classification of steel practically useless, and has occasionally given considerable trouble to officials and others charged with the task of properly designating these products.

Class 1.—Extra mild steels, such as have carbon from 0.05 to 0.30 per cent., a tensile strength of 25 to 32 tons per square inch, and extension of 30 to 37 per cent. in 8 inches of length. These steels weld, but do not temper. They are suitable for boiler, armour and girder plates, nails, wires, etc.

Class 2.—Weld steel, such as have carbon from 0.20 to 0.35 per cent., with a tensile strength of 32 to 38 tons per square inch, and extension of 15 to 20 per cent. These steels are difficult to weld, and can only be slightly hardened. They are suitable for railway axles, tires, rails, guss, and other uses where heavy strains are to be borne.

Class 3.—Hard steels, such as carry carbon from 0.35 to 0.60 per cent., with a tensile strength of 38 to 46 tons per square inch, and extension of 15 to 20 per cent. Such steels will not weld, but may be tempered. They are suitable for rails, special tires, springs, guide bars of steam engines, pieces subject to friction, and the like.

Class 4.—Extra hard steels, such as carry carbon from 0.50 to 0.85 per cent., with a tensile strength of from 46 to 61 tons per square inch, and an extension

STEEL VS. IRON RAILS

At a recent meeting of the shareholders of the North-Western railway of England, the chairman made the following remarks in reference to the relative value of steel rails and iron rails: "They had nearly completed the whole of the work of relaying the road with steel rails both on the main line and branches, and they were deriving very great benefit this half-year from the economy which the introduction of the steel rail had produced."

The name of Mill Point has been changed to Deseronto, the change to take effect from to-day. The total amount of time lost by the Lewiston, Me., factories by short water last fall amounted in money value to \$40,000 in wages, out of a total annual disbursement of \$2,500,000.

NAPANEE BLANKET MILLS.

Special to the Trade: Constantly on hand WHITE BLANKETS, SHANTY BLANKETS, HORSE BLANKETS, ETC., ETC., ETC.

Having special facilities for the manufacture of Every Description of Blanket, I am prepared to offer at A VERY LOW FIGURE ARTHUR TOOMEY, NAPANEE.



DIRECT TRADE BETWEEN CANADA AND THE BRAZILS.

Subsided by the Canadian & Brazilian Governments. MONTREAL and HALIFAX (Summer and Winter Ports.) TO PERNAMBUCO, BAHIA AND RIO JANEIRO, Calling at ST. THOMAS, West Indies.

NEW STEAMSHIP SERVICE PASSENGER AND FREIGHT.

Exceptional advantages to Traders, Export and Import. For all information, address F. J. MACKAY, General Traffic Agent, CANADA AND BRAZILIAN S. S. CO., OTTAWA.

WINANS & CO. Every grade of wool now in store, at lowest prices that unequalled facilities and such purchases can possibly provide. Send for samples. All foreign wools selected here by sale by our Mr. Ben Wilson, residing in England for the winter. 18 CHURCH ST., TORONTO.

SCIENTIFIC AND PRACTICAL.

ELECTRIC ILLUMINATION

The gradual progress of electric illumination toward the perfect condition which will soon be reached is attracting the attention of electric engineers and inventors to the question of its safety. It has been generally assumed or supposed that the electric light is absolutely safe, and that danger is removed by its insertion in vacuum in hermetically sealed glass globes. But leaving out of consideration the possibility of accidents to the globes, and granting the practicability of insulating the light securely in transparent vessels, what about the wires? The currents employed to generate the light are extremely powerful, in some cases many thousand times stronger than those employed to work telegraphs. A workman in a Birmingham theatre and a patron on board the *Lucina* were recently killed by incautiously seizing the exposed parts of the conductors conveying these currents. Telegraph offices have been set on fire even by the currents now employed in telegraphs. This has occurred in New York and Boston, as also in Manchester, England. If, then, it be difficult to maintain currents in their proper path in telegraphy, how much more difficult to maintain them in electric lighting. The wires may be enclosed in India rubber or gutta percha coverings, but these insulating crack or pin hole may suffice for the coatings, especially in columns, are liable to injury, and a mere escape of the currents, and consequent fire or explosion. The removal of the insulation may result in discharges of electricity which will be like flashes of lightning on a small scale, yet large enough in manufacturing establishments to jeopardize the safety of buildings and machinery, or the lives of employees. If the conductors are run from the dynamo machine promiscuously about mines it may become a source of danger in proximity to explosive gases; if about factories it may reveal new conditions that will require from the fire insurance companies more attention than they have yet bestowed upon it.—Baltimore Underwriter

DEVELOPMENT OF STEAM POWER.

A singular calculation has been made by some foreign arithmeticians of the extent to which steam power has developed. England, it is said, derives from the employment of her wealth of coal 7,000,000 horse-power per annum, the United States, 7,500,000, Germany, 4,000,000; France, 3,000,000; Austria, 1,500,000. This is exclusive of locomotive power, and, as in the old and new world, the total number of locomotives exceeds 105,000, which are working on some 220,000 miles of railway, the horse power is reckoned at 34,000,000. In France the horse power of the locomotive is 2,558,992, in addition to 8,177 belonging to fixed engines. Steamers, not reckoning the ships of war, employ 173,039 horse power, industries generally, 484,241. The total horse power of all the machines and engines worked by steam in the world is estimated at 80,000,000. Now, each horse is equal to at least 10 men, so that the steam power of the globe represents a daily working power of 800,000,000 men. The population of the globe has been reckoned by two German savants at 1,455,923,000, and the number of males between 15 and 65 years at about one-third of the population, this, in round numbers, gives the total of men of the working age at 500,000,000. As the steam engine does the work of about 800,000,000 men it follows that, since the invention of Watt and Stephenson spread its beneficent influence over all civilized countries, the resources of industry have been nearly trebled. And all has been accomplished before the steam engine, as a perfected practical agent, is half a century old.

IMPROVEMENTS OF THE STEAM ENGINE.

Those of you who have been familiar with the design and construction of steam engines during the past twenty or thirty years, says Prof. Thurston, President American Society Mechanical Engineers, and those of you who have been for a generation past accustomed to handle this miracle of art, will remember, as I remember well, how we learned, at a very early period in our experience, certain cardinal points of practice were very strongly impressed upon us. We soon learned by experience that efficiency was gained only as we learned to handle higher steam with properly adjusted expansion, to work our engines up to higher piston speeds, to cushion heavily when we had large clearance, to reduce that clearance to a minimum, to adjust the size of our engine to its work, and to determine the point of cut off under proper conditions, otherwise by the governor. We learned that the now well known "American automatic cut off engine," with its high steam and moderately large expansion, as exemplified by the "Corliss engine" which is now built all over the world, was the representative of best general practice. But we were not satisfied. Twenty years ago we began to understand that we had yet to perfect the philosophy of the steam engine, and that it was still apparently far from perfect efficiency. We then discovered that while our best engines were consuming from twenty-five to thirty pounds of dry steam per horse power per hour the mechanical equivalent of the heat supplied to the steam in the boiler was sufficient to give about a horse power per each two pounds of high pressure steam per hour, and hence that we were utilizing but one-tenth or one-fifth of the heat we were paying for when we settled our coal bills. Next we found that, owing to the fact that we cannot practically expand down to a pressure lower than that due approximately to the temperature of surrounding bodies, that we must therefore discharge heat unutilized, that the larger part of this waste is unavoidable, and that an engine, perfect mechanically, and working within the maximum usually of practicable limits, must waste three-fourths and can return useful effect from but one-fourth of the heat supplied thus placing the practical limit under known conditions at about eight or ten pounds of steam per hour and per horse power. And here we stand to-day with the steam engine, mechanically almost perfect, yet with a theoretical economy of about eight or ten pounds of steam per horse power per hour while consuming actually, in the best examples, about fifteen, *i. e.*, with an efficiency of 60 or 70 per cent. In hot air engines we are not making much more rapid progress, and our field of practice seems to be still in the improvement of the steam engine. We are slowly learning other facts. We know that the great obstacle in the way of attaining nearly theoretical efficiency is the transfer of heat from the steam to the exhaust side by latent condensation and re-evaporation, we are discovering that high steam and jacketing tend to lose their efficiency at extremely high pressure, with wide ranges of expansion, that it seems possible to reach a point in steam jacketing cylinders at which lower speed may tend to occur

of the work of the steam, that with well jacketed cylinders we may at least produce a saving of one day's labor with slow pistons, that we have better work done in day for single than for compound engines, by ten or fifteen per cent. the minimum yet to be reached under fair conditions for economy has not been reached by experiment as yet, while, assuming the very best conditions for each, it seems certain that both types should give about equally good results. Here is where we stand to-day, and it is from this point that we are to work forward. We need to collect more facts by means of carefully devised experiments like those of Hun and Hallauer, and of Emery and of the navy department at home, we need careful and systematic study of the results, and finally the determination of the laws of steam engine efficiency as affected by steam pressure and temperature, rate of expansion and compression, character of steam jackets, rate of piston speed, and every other circumstance influencing economy.—Chicago Journal of Commerce

HEARING NOISES TAKING PLACE ON THE SUN.

On visiting the observatory of Meudon, at the invitation of M. Janssen, Mr. Graham Bell examined with much care the large photographs which are being made there for the study of the solar surface. M. Janssen having informed him that he detected movements of a prodigious rapidity in the photographic matter. Mr. Bell had the idea of employing the phonograph for the reproduction of the sounds which these movements must necessarily produce on the surface of the sun. M. Janssen approved of the idea, and requested Mr. Bell to attempt its realization at Meudon, placing all the instruments of the observatory at his disposal. The weather being very fine on the day appointed, Mr. Bell came to Meudon to attempt the experiment. A large solar image of 0.65 meter in diameter was examined with the selenium cylinder. The phenomena were not sufficiently decided to be regarded as successful, but Mr. Bell does not despair of succeeding on further examination. M. Janssen suggested that the chance of success would be much greater if in place of directly interrogating the solar image where the variations are produced, though responding to considerable changes on the sun's surface, are not sufficiently rapid even in the most powerful instruments to cause the production of sounds in the phonograph, a series of solar photographs of one and the same spot, taken at sufficient intervals to obtain well marked variations in the condition of the spot, might be passed with a suitable rapidly before an object glass, which would give conjugated images upon the selenium apparatus. This would be a means of condensing into a time as brief as could be desired the variations which in solar images are much too slow to give rise to a sound. M. Janssen has placed himself at Mr. Bell's disposal to provide him with solar photographs suitable for carrying out this idea, and the latter has sent M. Janssen the photographic apparatus requisite. It has appeared to Mr. Janssen that the idea of reproducing on earth the sounds caused by great phenomena on the surface of the sun was so important that the author's priority should be at once secured.

THE ART OF WOOD WEAVING.

The manufacturing district of the Austrian empire lies in the north of Bohemia, where miniature Birmingham and Manchester are congregated together by the dozen, and hundreds of thousands of "hands" are actively and ceaselessly employed. For miles the high road is bounded by houses, chiefly one storied wooden buildings with roofs of thatch or shingle, where the rattle of looms may be heard without intermission from early dawn till late at night. In some of the towns numberless chimneys pour forth volumes of black smoke by day, while by night the windows of the large factories glow with light as if there were a general illumination. One of the busiest of these little towns and villages is Khrtenberg, which lies close to the Haxon frontier, and is distinguished from the rest by a peculiar industry, which appears to be carried on in only two other places besides. This peculiar industry for which Old Ehrenberg is distinguished is wood weaving, *spinnere* work, as it is called, which was introduced something more than a century ago by a carpenter named Anton Mensel. The threads used for weaving are no thicker than writing paper, and vary in width from the fifth to the twenty-fifth part of an inch. The aspen is the only tree whose wood is sufficiently tough and pliable to supply these threads in the required lengths. The aspen was formerly indigenous in Bohemia, but has now almost entirely disappeared, or at all events does not exist in sufficient quantities to supply the demand in any degree. Consequently the raw material for the *spinnere* work has to be brought from Russian Poland, which is both a laborious and expensive process. The wood merchants go to Poland twice every year, in the early spring and in the autumn, the only times at which the wood can be cut with advantage, as none can be used at once but that in which the sap has not yet risen, or from which it has departed. Wood cut during the summer has to lie in water for a year, otherwise it is rot and useless. It must be quite free from knots, as the smallest defect or irregularity, such as ordinary persons would hardly notice, makes the fibres quite unfit for weaving purposes. Arrived in Ehrenberg, the wood is planed and divided into pieces nearly 2 1/2 inches wide. These have been made perfectly smooth they are divided again by an instrument resembling a plane, but furnished with a number of fine knife-edges, which mark the wood at regular distances according as the strips are to be 3/4 or 1/2 of an inch in width. This process requires the utmost dexterity and nicety, as it is absolutely essential that the divider should exactly follow the direction of the fibres and for this reason among others it must always be done by hand. The divider makes the strips 1/4 of an inch deep, the wood is then carefully planed, and comes off in thin paper like strips, some of which are not wider than a stout thread. They are gathered up as they fall by women, who examine them and pick out any defective pieces, and in spite of all the care taken in the selection and manipulation of the wood there is a good deal of waste in the process. The threads or fibres, being now ready, must be tied in couples at one end before they can be woven. This work is done by children, and in Ehrenberg little creatures of four years old and upwards are employed at it, and earn fourpence a day. The weaving is done chiefly by women, and in looms which differ considerably from those in ordinary use, the fibre being, as before mentioned, not more than from 3/32 to 5/64 inches in length. The longer fibres form the warp, the shorter (28 to 32 inches) the woof, which is inserted in and out by means of a little instrument with an eye like a needle. Until within the last few years this concluded the whole process—the "foundations," as they are called, were complete, and nothing more

was done, except that the warp and caps were made of them. But these were of the very simple description, and anything but beautiful. Moreover, they were made together which made them very unpleasing to wear in hot or wet weather, and a continually increasing number of people of 25 and 30 per dozen, and were worn only by the very lowest classes. Within the last few years, however, a great change for the better has taken place, thanks probably in part to the energetic efforts of the Government in the manufacture of hats, and in part to the fact that the Ehrenbergers have at last begun to direct their own interests. At present the hats, sent out not only the raw material, but ready made goods—fashionable hats of all kinds and every variety of fancy are skillfully executed out of the wood fibre, ladies' hats of every possible description and the latest fashion such as to be worn, are made entirely of wood, and sold at astonishingly low prices. Men's hats are to be had of all shapes, from the Panama hat—not a whit inferior to that brought in Paris—to the common hats exported in large quantities to China, and the Hingoor foundations which give stiffness to the fez of the Turkish soldier. The export trade embraces all Europe, from Spain to Russia, extends beyond the Caucasus to India and China, and maintains active relations with North and South America, as well as Australia. The manufacturers are in direct communication with the four quarters of the world, and their goods are being introduced into Africa by French and English traders.—Casell's Family Magazine

LAMP EXPLOSIONS.

All explosions of coal oil lamps are caused by the vapor or gas which collects above the oil. When full of oil, of course a lamp contains no gas, but immediately on lighting the lamp consumption of oil begins, soon leaving a space for gas, which commences to form as the lamp warms up; and, after burning a short time, sufficient gas will accumulate to make an explosion. The gas in a lamp will explode only when ignited. In this respect it is like gunpowder. Cheap or inferior is always the most dangerous. The following shows that many things may occur to cause the flame to pass down the wick and explode the lamp. 1. A lamp may be standing on a table or mantle, and a slight puff of air from an open window, or sudden opening of a door, may cause an explosion. 2. It may be taken up quickly from a table or mantle and instantly exploded. 3. If taken into an entry where there is a strong draught from the door an explosion is likely to ensue. 4. If taken up a flight of stairs, or raised quickly to place it on the mantle, it is likely to explode. In all these cases the mischief is done by the air movement—either by sudden checking the draught or forcing the air down the chimney against the flame. 5. Blowing down the chimney to extinguish the light is a frequent cause of explosion. 6. Lamp explosions have been caused by using a chimney broken at the top, or one that has a piece broken out, whereby the draught is variable and the flame unsteady. 7. Sometimes a thoughtless person puts a small size wick in a large burner, thus leaving a considerable space along the edge of the wick. 8. An old burner, with its air draughts clogged up, which by right should be thrown away, is sometimes continued in use, and the final result is explosion.

To protect rough woodwork against sparks and light flames inside the building, saturate the wood with a strong aqueous solution of tungstate of soda.

A new method of repairing cracks in boilers, invented in Germany, consists in the use of a sort of wedge block—a pair of tapered pins connected with each other in one solid body by a flat wedge.

To make strong cement for steam joints, take 10 parts of white lead ground in oil, 3 parts black oxide of manganese and 1 part litharge. Reduce to a proper consistency with lard oil and apply when needed.

When the inside of a steam cylinder has become cut by running dry or from some other cause, the surface can be restored by grinding out the cylinder with a true segment of lead and sand or emery. Great care must be taken to do it so as to leave the cylinder true.

Prof. E. Niedemann, in his investigation of the behaviour of gases under the influence of electrical discharges, has arrived at a confirmation of a fact previously given him: That a gas may be rendered luminous by electric discharge without any corresponding elevation of temperature.

A device which is considerably used to prevent the clogging of millings consists of a simple rod of wood placed inside the eye and extending to the balance cylinder. The rotary motion of the rod separates the millings and prevents clogging, the same device being equally effective if extended into the feeding spout.

An ink that can only be read when heated is made as follows: Dilute a strong aqueous solution of pure chloride of cobalt with water until, when written with, the characters are invisible after drying at ordinary temperatures. Heat develops a dark blue or purple colour. Use a clean pen and sheet of blotting paper.

M. Stanislaus Meunier, a French savant, is reported to have succeeded in producing artificial opal, identical in hardness and chemical composition to the natural mineral, by heating together in a porcelain tube chloride of aluminum, metallic magnesium, and the vapour of water. By the interaction of water vapour and aluminum chloride, he affirms that he has succeeded in producing artificial corundum.

There are some fibrous packings which will wear very well in the stuffing box of a piston rod, but they must be of a substance that is not inclined to catch or hold gritty substances. A good metallic packing is far preferable to any other for cheapness and durability. A good quality of plumbago packing does very well, but the plumbago must be of the purest kind, which can only be procured from the most reliable dealers.

An improvement on the furnace of steam boilers has been patented at Birmingham, England, by which the bridging wall has openings upon the fire side with a hollow connection under the grate. A jet of steam is driven through the pipe under the grate which draws in air with it, and the whole is forced through the openings in the front side of the bridge wall, the idea being to ignite the unconsumed gases, making a very effective flame.

An invention has recently been patented to prevent the explosion of steam boilers by placing a partition across the boiler slightly above the water line, providing an opening through this partition, which is adjustable, and through which the flow of steam can be regulated to be equal to the average intermittent flow required for the engine. It is claimed that this prevents dangerous variations of pressure on the surface of the water, hence preventing explosions. It is an American invention.

A very cheap weather glass is described in an old sportsman that surpasses that of any other barometer. In a corner of a room, in a place carefully protected a spider web is stretched across the threads which hang down, and wind may be expected, it is said, that the weather is certain. The spider web may be expected to extend twenty-four hours, if this prediction is in the evening a fine night and a light breeze may be prognosticated.

Shafting is generally put up too high, and is demanded of it. Many persons taking it for granted that there are only lingers enough the distance between the shafts is of little consequence, but this is a mistake. A longer is only a mechanical advantage, it adds nothing to the torsional strength of a shaft of iron of a given length and diameter, but twisting or, resistance of a shaft to its length and diameter. It is a good thing to have wheels on long lines of shafting, where possible, they answer in a measure to equalize the transmission.

Recent experiments by G. Hoffman show that the passage of a galvanic current through iron wire increases its strength. With feeble currents the increase of strength for equal times was nearly proportional to the strength of the current, but if the current was somewhat stronger the law did not hold out, owing to its heating the wire. Up to a certain maximum there was an increase of strength with increased time. The strength seemed to be greater while the current was passing than after it was broken. The increase of cohesive strength is considered partly due to the heat generated by the current, and partly to the galvanic current itself.

In the cold process for zincing from the metal is first cleaned by being placed in a bath made of water, 1,000 litres; chlorohydro acid, 550 litres; sulphuric acid, 50 litres; glycerine, 20 litres. On being removed from this bath the metal is placed in a bath containing 10 per cent. of carboated potassium, and next transferred to a metallizing bath, consisting of water, 1,000 litres; chloride of tin, 5 kilos; chloride of zinc, 4 kilos; bitartrate of potassium, 8 kilos; sulphate of alumina, 4 kilos; chloride of aluminum, 10 kilos. The metal is to be left in this mixture for from three to twelve hours, according to the thickness of the layer of zinc to be desired.

The electrical blowpipe of M. Jamin consists of a pair of carbon pencils—an electric candle, in fact, surrounded by a coil of insulated copper wire some few inches distant from the pencils in the plane of their axes. The current is so led that, in circulating round the coil, it will attract the electric arc formed at the lower end of the carbon pencils, and cause it to flash out almost in the form of a jet of gas flame. This spreading out of the arc is the special feature of the action of the apparatus. It facilitates the application of the heat of the electric arc to the fusion of refractory substances, and enables us to take advantage of this little used means of producing a very high temperature.

A correspondent of the American Machinery gives the following directions for case hardening small articles: Take ferro-cyanide of potassium commonly called prussiate of potash, pulverize it and put it in a box two or three inches deep and large enough to take in the largest piece you wish to case harden. Heat the finished article to fairly a red heat and roll it in the powder in the box, being careful that the powder touches every part of the piece. Next put it back into the fire and heat slowly and evenly to a cherry red. Plunge it into cold water and the job is done. The thickness of the case hardening will depend on the length of time it is left in the fire after dipping in the powder, and also on the quality of the iron.

To make cement to stop steam leaks take 1. Iron borings, powdered fine in a mortar, 1 lb. sal ammoniac, in powder 2 oz., flowers of sulphur 1 oz. Mix the whole thoroughly dry. For use mix one part of the above with 20 of fine iron borings, and mix with water to the consistence of mortar. Use one part 2. Iron borings, 2 lb (clean); flowers of sulphur 1 lb sal ammoniac, 1 oz.; 3. 98 parts fine, clean iron borings and 1 part each flowers of sulphur and sal ammoniac, all dry. Mix thoroughly and moisten with hot water when required for use. 3. Fine, clean iron borings 1 lb.; sal ammoniac and spirit of salt, each 1/2 oz. wet to moisten thoroughly when required for use. The joint should be allowed to rest for at least 10 hours before putting under pressure. For cracks make a little rope yarn fibre first, then caulk in the cement.

Revolving shafts in mills. One of the simplest methods of rendering these casualties impossible, without introducing the necessity of constructing a railing or fence about the moving piece in dangerous places, is to cover the shaft with a loose sleeve along its entire length. This may be made of sheet tin or zinc, and to be removed if desired. It should be secured within and at the ends with leather, to prevent it from slipping in this manner, the friction between it and the revolving shaft would be sufficient to cause the sleeve to rotate with the latter; but in the event of any decided resistance being brought to bear upon it, as in case of the entanglement of a workman's garment, the sleeve would at once be brought to rest, and permit of extraction without accident. The use of loose covers may be applied to rock wheels, pulleys, and prove an invaluable protection against loss of life or injury to person.

The oxidation of iron immersed in ordinary water says *Engineering*, appears to be mainly due to two causes, namely: First, the absorption of oxygen retained in the water, and second, the absorption of oxygen set free during the decomposition of hydrogen being set free in the latter case. A French savant who has made a number of experiments on the oxidation of iron wires immersed in water and various solutions, and who has described his experiments in the *Comptes Rendus*, has arrived at the conclusion that the first of the above causes of oxidation is generally the chief importance. With both distilled and ordinary water the temperature has a very important influence. Thus, at 65° Fahr. the quantity of oxygen absorbed per square foot of iron surface per hour, when immersed in distilled and a carbonic water respectively were 6.258 grains and 6.339 grains, whereas at 212° the quantities rose to about 2.64 and 2.65 grains. The immersion of iron in all the waters tested was accompanied by the evolution of hydrogen, the action being lost, however, in distilled water. At a temperature of about 260° Fahr. the decomposition of the water was found to be equivalent to the absorption of 0.01 grains of oxygen per square foot of surface per hour for distilled water, 0.0182 grains for water containing one-fifth part of crystallized chloride of magnesium; 0.03 grains for water saturated with chloride of sodium, and 0.067 grains for sea water.

MINING NEWS.

MINING ON LAKE SUPERIOR

From the sources we understand that work will be prosecuted vigorously in the Jarvis Island mine...

DUNCEAN MINE

The shaft is about hundred feet from the surface and the shaft continued drifting east at that point...

RAT PORTAGE GOLD MINING.

The work of blasting the rock in the gold vein on Boulder Island has been commenced. This island is one of the Lake of the Woods islands...

CANADIAN GOLD FIELDS.

Mr W Chapman, of St. Francois, Bruce, has written a very interesting little work on the Beauce gold mines. He proves that the mining resources of Beauce are very rich...

THE GOLD MINES OF BRITISH COLUMBIA.

Two items of mining intelligence in our Thursday issue are both significant and in the highest degree encouraging. For more than a year reliable information has from time to time been received...

latter named workings will turn out well and afford remunerative employment for a large number of miners. These two instances of the richness of the Cariboo country are noted...

COMPRESSED LIGNITE AS FUEL.

An important, if not a vital, question in Texas, especially with respect to the industrial development of the state, is how to utilize the extensive beds of lignite which abound there. Indeed, in the lack of true coal the state can hardly accomplish much in the manufacturing line without first solving this problem...

GEOLOGICAL FORMATION OF THE THUNDER BAY DISTRICT.

The "Geology of Canada," a work written by Sir William Logan, describes the geological formation of this district as: 1. The Laurentian; 2. The Huronian; 3. The Upper Copper Rocks. The former of these occupies principally the height of land, and in only a few places touches the lake shore...

Here (and others), and Isle Royale. The phenomenal richness of the Calumet and Hecla lodes is well known. Here the lodes conform with the strata dip at a high angle, on our side these rocks dip at a low angle...

INSURANCE MATTERS.

LIFE INSURANCE ABROAD.

In the United States, the more skeptical are apt to class life insurance with the modern invention of wooden nutmegs, common to Connecticut and some other Eastern States, and dating no further back than 1760 or 1835 or thereabouts. This prevalent error has been enlarged by the failures and amalgamations of so many of the speculative concerns that have been but imitations of the genuine, and have survived but an ephemeral existence...

THE SUIT AGAINST THE EQUITABLE.

The case of a policy holder against the Equitable Life Assurance Society, which was argued on the Society's demurrer to the complaint on Monday last, before Judge Larremore in the Supreme Court, has been extensively noticed by the press throughout the country, but not in such a manner as to give the public any adequate idea of the great importance of the points at issue in the suit, or of the extraordinary character of the defence set up by the Society. We propose to supply the omissions by shortly reciting the allegations in the complaint and the points in defence put forth by the defendants. The suit, strictly speaking, is not brought against the Equitable Life Assurance Society, although that corporation is necessarily made a party to it, but against its President, Mr. H. B. Hyde, and certain of its directors personally, for unlawful use and appropriation, for their own personal profit and advantage, of the funds belonging to the policy holders. The plaintiff in the suit alleges that vast sums of the policy holders' money—many millions of dollars in amount—have been appropriated, contrary to law, in the erection of office buildings for more extensive than were necessary for the accommodation of the Society's business, and in the wasteful and extravagant furnishing and decoration of the same, by which serious loss was occasioned to the policy holders in the Society, that other large sums of the policy holders' money were expended in the fitting up and furnishing certain portions of these buildings as safe deposit vaults, and that, having been so fitted up by the use of the money of the policy holders, they were then rented to Mr. Hyde—being at that time and now the President of the Society—and a small clique of his personal friends among the Directors, at a rental which has enabled them to sublet the same premises at an advantage and profit to themselves. This profit, it is believed, is not over estimated at \$75,000 a year. It is further alleged that nearly \$1,500,000 from the same source was invested in the capital stock of the Mercantile Trust Company, a corporation created under the laws of the State of New York, by Henry B. Hyde, George D. Morgan, Henry A. Huriburt, Henry M. Alexander, and other Directors of the Equitable for the express purpose of using the funds of the Society in their own private interest, and that the greater portion of said investment in the capital stock of the Mercantile Trust Company was made contrary to law, that is, when the same was not at par in the city of New York. It is alleged that "aid defendants directors have thus corruptly and fraudulently made use of and profited by the said property and funds, and have speculated with the same for their own private benefit, contrary to law and in violation of the rights of the plaintiffs and said other policy holders, and to their damage and injury." This is the substance of the complaint, and the plaintiffs ask (1) for an accounting of the assets and liabilities of the Society, and especially of the funds said to have been misappropriated and wasted; (2) that the defendants be decreed to take the real estate and the stock of the Mercantile Trust Company, and to pay over the money paid for the same and interest thereon to the defendant corporation, and that they be compelled to restore to the Society all the profits which they have made by the letting and subletting of the Society's property as stated, and to restore all profits and advantages which they have used as officers and directors of said Society; (3) that a receiver be appointed to whom the sums so appropriated may be paid over until the final determination of this suit, and (4) that an injunction be issued to restrain the defendants from any further wasteful use of the funds of the Society. The defence set up by the defendants is of a most extraordinary character, and well calculated to astonish and alarm every policy holder in the Society, on account of its high headed injustice and audacity. Having demurred to the complaint on all possible technical grounds—points in no shape or way involved in the issue of the case—they boldly contend "that the plaintiff a policy holder, has no rights which entitle them to bring this action. The policy holder is not a creditor qua trust, and neither the directors nor the company are trustees. The policy holder is not a partner. He is not a creditor. He is not a member of the company. He is a person who holds an agreement to receive a certain sum on a certain day!" These are the exact words of the answer. Could anything be more monstrous than this? Here are, say, fifty thousand policy holders in this corporation who annually contribute of their means to swell its vast accumulations, firmly believing that they are creating a fund the ownership of which is legally vested in themselves, and that the directors and officers are merely their representatives and trustees for its safekeeping and management, and for its final disposition in accordance with the terms of their respective policies. This is certainly the popular understanding of the matter—the one, moreover, which is

in accordance with justice, propriety, honesty, and common sense. Mr. H. B. Hyde, however, and his chosen knot of associates think otherwise. They contend that the money is theirs (they certainly have used it very much as if it were), that those who contributed it have no rights which entitle them to restrain the use or abuse of it in any way, that no relation of trust exists between the directors of the company and the policy holders, and that there is merely a contract, evidenced by the policy, and their rights and remedies are governed by the law applicable to other ordinary agreements. This position is certainly not an inappropriate one for the organizers of the Mercantile Trust Company or the inventor of the life insurance business to take. Its brazen audacity and inherent dishonesty are extremely characteristic. Should the claim set up by the defendants in this suit be maintained in law, it will be the nearest blow that life insurance has yet experienced. It is a blow which should utterly destroy public confidence in any company not purely mutual or in which a stock capital exists. We have truly stated the line of defence taken by the directors of the Equitable in this suit, which, it will be seen, is to decide the ownership of the \$41,000,000 contributed by the policy holders. As matters stand at present, the policy holders have no voice whatever in the management. No policy holder has a vote in the election of directors. No election is ever held except to fill a vacancy, when Mr. Hyde, who owns a majority of the stock, "qualifies" a friend for the position of director. With such a state of affairs existing, it can readily be understood why a few shares of this company, which somehow found their way to the Exchange, should be bought in at \$1,040 per share, although their par value is only \$100, and the annual dividends restricted by law to 7 per cent. per annum. Can it be possible that the policy holders in this company will look with indifference on the outrageous claims set up by its managers? That the press of the country will not use its influence in exposing this most audacious scheme and appropriation of the most sacred of trust funds by its managers for their own use? That the legislature of the state, now in session, will not immediately take such action as shall secure the 50,000 policy holders of this corporation in their just rights against the rapacity of managers who have the insolence to make such a claim as that set up in this suit? "Where is the fund," they impudently ask, "in which the plaintiffs, as policy holders, have any interest?" This is but another way of putting the question, how become historical, of their great prototype, "What are you going to do about it?" The following are the exact words of their reply to the foregoing insolent interrogatory. "The fund produced by the payment of all the premiums does not in any sense belong to the policy holders, but belongs exclusively to the company, and the policy holders are interested in it in the same way only that the creditors of any other corporation are interested in its funds." Will the 50,000 policy holders in the Equitable, by their silence, admit such a claim as this?—New York Daily Indicator.

The new Maine law requires that all life insurance companies incorporated by that state shall locate their head office and elect their directors in that state. Accordingly, the Union Mutual Life, which for over 30 years has had its headquarters or directors' office in Boston, will now make arrangements to locate in the State where it is incorporated. Mr. Dewitt, its president, is now in Maine, and it is highly probable, as the company owns real estate in Portland, that its office will be located there. The company stands well, and the idea seems to be to give it a local start in Maine, which will be advantageous to its future. As but one of its directors is a Maine man, there will necessarily, to comply with the new law, be a election for directors.

Mr A. G. McDonald, of Ottawa, has taken out a patent for a railway track wrench. It is intended for putting the nuts in flat-plate bolts, and the inventor claims that one man can go over a mile of track in a day, doing as much work as eight or ten men.

The new lock and canal at Sault Ste. Marie will be ready for use about July 1, 1881, with a depth of water at the present stage of sixteen feet. The river has been dredged to sixteen feet for forty miles southward from its head. Now that the final appropriation—\$150,000—for the completion of these improvements has been made by Congress, our shipping will have the use of the increased depth of water—sixteen feet—throughout the entire channel between Lake Superior and Lake Huron in 1881, excepting at two points—Lake George and the East Neebish rapids. The work in Lake George is under contract for completion in 1882. The improvement of the channel at the East Neebish rapids has been in the hands of the Government of the Dominion of Canada.

The trade between Germany and France since the war between the two countries has assumed proportions hitherto unattained. In most years France exported more than it imported from Germany, but in the years 1866 to 1869, 1870 and 1878 the relations were reversed. The export of French manufactures to Germany has always been extensive, amounting in 1861 to 144,500,000 francs. The import, on the contrary, amounted in 1874 to only 11,900,000 francs, but rose rapidly, attaining in 1869 the figure of 49,700,000 francs. The mutual trade of these two countries developed greatly after the war, and in 1878 France imported merchandise from Germany to the extent of 152,000,000 francs exporting in that year 163,400,000 francs worth of manufactures. To the United States Germany's exports gradually increased to the year 1873, since which time they have declined year by year. The imports from the United States have increased from 79,000,000 francs in 1864 to 328,600,000 francs in 1874, since which year they also have declined.

The consumption of corn in England is yearly increasing. In Germany millers have used successfully an admixture of 25 per cent. of maize flour with rye flour. The German rye crop for 1880 was considerably larger than in 1879, but it has been found necessary, to supply the demand, to import annually large quantities from Russia, which imports in 1879 amounted to 28,591,461 centners of 110½ pounds, against exports for the same time of 2,989,553 centners. Holland millers use as high as 33½ per cent. of maize or corn flour for admixture with rye flour. They claim that a pound of maize flour only costs half as much as a pound of wheat flour, and yet furnishes nearly as great an amount of nutriment. Now that foreign millers and dealers have got into the practice of using corn flour, it seems probable that the demand for American corn will rapidly increase, and to such an extent, perhaps, that the demand for our wheat and wheat flour, at good prices, will be materially interfered with. There is said to have been a firm demand, at good prices, for all the American corn flour that has been shipped.

MONTREAL PRICES CURRENT.

Table of Montreal prices for Groceries, Copper, Beans, Raisins, Nuts, and other food items. Columns include item names and prices.

Table of Montreal prices for Drugs and Chemicals, Window Glass, Iron and Hardware, and other industrial goods. Columns include item names and prices.

Table of Montreal prices for Leather, Boots and Shoes, and Raw Furs. Columns include item names and prices.

WEEKLY REVIEW.

Weekly Review text starting with 'MONTREAL, March 30th, 1881.' and discussing market conditions for various goods.

Additional market news and commentary, including sections on 'LEATHER', 'BOOTS AND SHOES', and 'RAW FURS'.

Vertical text on the far right edge of the page, possibly a continuation of the market news or a separate column.



THE LUMBER TRADE.

THE BRITISH MARKET.

(Lumber Trades Journal) Means, Churchill & Sims a great sale has been almost the sole topic of conversation in the London timber trade during the week, and however favourably it may be regarded by the outside public, it is very certain that the import merchants look upon it as an innovation which may lead nobody knows where. There were some large sales held last autumn, but it remained for the present March and the same brokers to inaugurate a new system of the public sales, which throws all those that preceded it into insignificance. More than a million and a half of North of Europe deals and latins were advertised and sold without any reserve upon them, over 30,000 American deals and latins, also 210,000 pieces of flooring, and about 2,000 loads of various kinds of timber, besides joinery goods sufficient of themselves to have brought together a considerable assemblage, and the quantity held in reserve out of the whole catalogue, instead of about 75 per cent. as heretofore, was not 2 per cent. The three days' sale has been estimated to have done the market with a quantity equal to about 300 or 400 average Baltic cargoes of 100 standards each. Now that the great sale in London is over it is probable that strenuous efforts will be made to secure orders, and we look forward to hear shortly of a good many transactions being effected, although in the opinion of some, importers will not be disposed to make engagements generally until about May.

The departure from the usual custom of the Liverpool auction sales is noticeable in the announcement that Messrs. James Smith Smith & Co's sale on the 16th inst. will take place in the city, at the Law Association Rooms, instead of at the docks, as has been the custom heretofore. The change will probably be welcomed by city buyers, who will thus avoid the loss of time involved by the journey to the docks. The deliveries from the Surrey Commercial Docks during the last two weeks have been very much in excess of the corresponding period of last year, and this may be taken as a hopeful sign in regard to the state of business, although the total figures since Jan. last are still somewhat behind hand.

The imports during the past week have been considerable, and consist mainly of pine wood from France, along with a few cargoes from Norway. Besides late stragglers, we notice in addition the arrival of two or three cargoes of oak that should find a good market, considering the activity which has prevailed in shipbuilding. We hear that several of the Swedish exporters have lately been in London, among them being Mr. Rohm, of Gothenburg, and Messrs. Wickstrom & Axell, of Sundewall, but business has been found slow to move, as might have been expected. It is reported, however, that as large sales have been effected in France and Belgium for shipment during the forthcoming season, the situation, as far as the market is concerned, is regarded with a certain amount of indifference. During the recent unsettled state of affairs, of course very few orders on board sales are reported, but things have not been quite at a standstill, one agent alone, we hear, having closed four contracts last week at outports.

Our latest advices from Sweden report that a fair amount of buying for L. W. has taken place during the last fortnight for Continental markets, and the prices paid in several instances have been fully equal to Dickson's quotations for London. Exporters are professing themselves able to detect an improvement even in the English market, and they anticipate that they will not be obliged to reduce their quotations much, if anything, under £11 for mixed deals of an ordinary Gede or Soderlam brand.

A rumour is current to the effect that the partnership hitherto existing between Mr. W. H. Kompf, Stockholm, and Messrs. Rohm, in Gothenburg, as joint owners of the Ljusne and Woxna Mills, etc., is to be dissolved in such a manner that either one or the other of the firms alone is going to take over the whole concern. The sum named as the value of the two establishments is £250,000, a pretty large sum for a private undertaking in Sweden. The Ljusne Saw Mills are at present being remodelled and improved. The only import of foreign timber to Clyde during the week, besides a parcel of staves and 62 logs American walscot, has been a large cargo of oak from Bangkok. There have been no arrivals at Grangemouth, on the east coast.

Messrs. Singleton, Dunn & Co's sale at Greenock was fairly attended. Not many logs were sold (about 200), but a large number of deals, especially Quebec spruce, were cleared out. The stock of spruce here is almost exhausted, so that the first arrivals will come to a large market. A cargo is now expected. The quantity of deals delivered from Yorkhill yards alone since the beginning of this year amounts to 150,000 pieces, chiefly Quebec pine. The stock of lower port birch is almost cleared out, and the market is much in want of American black walnut, of which there is none on hand at present. A cargo of Mitatlán mahogany is daily expected here, having been ordered from port of call.

NEW BRUNSWICK.

It requires little acquaintance with the merchant and business men about town to see that more than ordinary preparations are being made for the lumbering season. Vessels about the harbour are being cleared for action and the mills are fast getting in readiness for business. Some of them have already started, and others will commence work in a very few days. Efforts are being made by lumber operators and agents to show that by reason of the early spring not nearly so much lumber will be got out of the streams as was at first expected. This is done, of course, with a view to effect the rates of sawing and shipping. It is probable that a large percentage of the lumber cut in the woods will not be got to the market, as the continued thaw of the last fortnight will reduce the volume of the stream.

The business in the English market has continued quiet; there has been a visible increase in the quantity of orders on the market, though they have been, as far as New Brunswick is concerned, more numerous than large. The term of last season's shipments of deals is over and prices at Liverpool have dropped until they cannot be expected to go lower, as all the yarded stock was imported at higher rates than those now current. Producers here must be prepared to suffer a still further reduction if they persist, in the face of the large stocks in the old country, in getting out large quantities of logs for deal cutting. Freight will, in all probability, rule low for the opening of navigation here. The common qualities of yellow pine timber, say from good fair average and downwards, are becoming year by year less in quantity and much less valuable than formerly, owing to the competition they meet with in

pitch pine, as the latter can be obtained, not only of longer lengths and better size even in sawn timber, but what is now always of greater importance, at a much lower rate than is asked for the Canadian product. Last fall when lumber was bringing in a good price it was thought that the coming winter there would be a general rush for the woods. It was then predicted that in consequence of the immense cut, lumber would sell at a ruinous price in the spring and many of the operators would suffer financially. On the upper St. John, however, this is wide of the mark, for it is estimated that the amount of logs cut on the Acostook and Tobique and the small streams in the vicinity will not exceed 25,000,000 feet. It is impossible, however, to figure the supply at market this spring from the cut in the woods as the drivers may be hung up, as they often have been, and possibly have a not over large supply available.

King's mill, at Mosquito Cove, has commenced operations for the season. A slight accident occurred Saturday, making a slight delay, but it is expected that the mill will be ready to resume work on Tuesday. Mr. King employs thirty hands. Jewett's mill at Brury's Cove is undergoing quite extensive repairs for the season's work. With the exception of the R. Dean, the St. George and the Norman, the tugs are all in readiness for the campaign. The Yankin, retired in August last, is out again. The others will be out in a few days.—St. John, N. B. News.

THE DECADENCE OF TIMBER.

So much has been written during the past two years regarding the decrease of the timber supply of the North-West, and the assertions of those whose superior means of judging have enabled them to sound the note of alarm have proved so prolific a subject of merriment to a large class of writers, and even to lumbermen, who, seeing from their office windows, or from the banks of a steam, large bodies of lumber and logs, in quantities not apparently lessening from year to year, have sneeringly denied that it was possible for the supply to become exhausted or, at least, that the present generation should be able even to discover the near approach of the day when the beginning of the end should be apparent, that it becomes a matter of more than ordinary persistence to us to be able to verify the assertions so persistently made in the columns of the Northwestern Lumberman upon the subject. These assertions have pointed plainly to the fact that the timber supply of the North-West is becoming so rapidly exhausted that within the next 10 years something like a timber famine is to be looked for. Critics have combated these opinions by bringing forward the fact that such assertions were made 10 years ago, and that in place of the supply dwindling out, as predicted, a constant increase of production has yearly taken place and the end is apparently no nearer than when the former prophesies were uttered. These critics ignore the fact that former estimates took no account of those large bodies of pine timber which were not readily accessible to streams, and, as well ignored all the coarser grades of timber, which at that time, not being considered profitable to handle, were not taken into the estimates. They forget that means have been found to reach timber which then possessed no value because it could not be utilized, and that railroads now penetrate those sections which were then a wilderness. They lose sight of the fact that a vast territory then unknown to any but the hunter and trapper has become inhabitable by a thrifty class of settlers, each intent upon clearing off what was then a reserve, that, with the wonderful growth and increase of the country, the remotest body of pine has been examined, estimated as to quantity, and steps have been taken to bring it to market, until to-day, what was a reserve 10 years ago, entirely unestimated and not entering into the calculations of the statistician, is thoroughly known, its extent measured and its resources not only understood, but largely drawn upon; and that, to-day, there is no foot of territory in the North-West which can in any measure be considered either as a reserve or as an unknown factor to modify the calculations of the statistician. They forget, also, that, while the calculations of 10 years ago took account of nothing but the better grades and the larger sizes of standing timber, the cutting of the lumbermen, and the figures of the estimator of to-day, includes the clearing of the forest to the smallest trees capable of making the minimum size demanded by the consumer. With these remarks, by way of preliminary, the Lumberman is enabled to lay before its readers some facts and figures which, partaking of the nature and possessing the value of official compilations, may well be assumed to possess a value far greater than any which have hitherto been given to the public upon this question, and to be worthy of the deepest consideration of the thinking minds that are interested in the matter of timber supply. In connection with the last of the census for 1880, the forestry division of the department of agriculture has entered upon the work of ascertaining, as nearly as possible, the timber resources of the country, which it is intended to illustrate in the forthcoming report by means of maps. The work, so far as it includes the states of Michigan, Wisconsin and Minnesota, which comprise nearly the entire area of the white pine belt, has been in the hands of Mr. C. H. Putnam, of Eau Claire, Wis., who, having called to his aid many of the leading practical lumbermen of the states named, has at last completed his task and presented its results to the department. The Lumberman, having become possessed of some of the facts and figures collated, is now enabled to lay an epitome of them before its readers, and to say, with some degree of assurance, that the forthcoming report of the United States census will show the timber supply of the North-West to be about as given below. The state of Minnesota, which has been credited by popular estimate with the possession of about 40,000,000,000 feet of timber, will, by the census reports, be shown to have but 6,120,000,000 feet, distributed as follows:—

Rainy Lake and tributaries ..... 350,000,000  
Red River and tributaries ..... 600,000,000  
St. Louis and Cloquet Rivers, etc. .... 1,500,000,000  
Mississippi River and tributaries ..... 2,900,000,000  
North shore of Lake Superior ..... 800,000,000  
Total ..... 6,150,000,000

The state of Wisconsin also shows a vast decrease in the amount which has been estimated by lumbermen and newspaper writers, whose statements have varied between 80,000,000,000 and 100,000,000,000 feet. Divided into districts, the census reports will show the following results:—

St. Croix River and south shore Lake Superior ..... 6,000,000,000  
Chippewa River and tributaries ..... 12,000,000,000  
Wisconsin River and tributaries ..... 11,000,000,000  
Lake Superior District east of Range 11. 2,000,000,000  
East of the Wisconsin River ..... 9,000,000,000  
Total ..... 40,500,000,000

The census reports will show the following results:—

St. Croix River and south shore Lake Superior ..... 6,000,000,000  
Chippewa River and tributaries ..... 12,000,000,000  
Wisconsin River and tributaries ..... 11,000,000,000  
Lake Superior District east of Range 11. 2,000,000,000  
East of the Wisconsin River ..... 9,000,000,000  
Total ..... 40,500,000,000

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St. Croix River and south shore Lake Superior ..... 6,000,000,000  
Chippewa River and tributaries ..... 12,000,000,000  
Wisconsin River and tributaries ..... 11,000,000,000  
Lake Superior District east of Range 11. 2,000,000,000  
East of the Wisconsin River ..... 9,000,000,000  
Total ..... 40,500,000,000

The census reports will show the following results:—

Clover is dull at \$4 80 per bushel of 60 pounds. Beans are scarce and dear at \$1 30 to \$1 40, and chick peas at \$1 30 to \$1 40. Black later are quoted steady at \$1 10 to \$1 15 per bushel of 60 lbs.

From the M. A. The flour trade during the week has developed slightly easier symptoms, and buyers have developed a change that they could a week ago. The latest sales were made at \$5 00 to \$5 10 for superior extra, at \$4 75 for extra and \$4 50 to \$4 75 for spring extra. Flour sales have been placed at \$3 75 to \$4 20 as to strength of flour. Middlings brought \$4 00 today, and city flours are down to \$3 00 and \$3 05. There was no transaction on the Corn Exchange this morning, which follows the dull state of the market. In oatmeal the business being still done upon the basis of \$4 00 to \$4 10 per bushel. The advance in grain \$1 00 per bushel was short-lived, as it is now down to \$2 00, and oatmeal having changed hands at this price, several oat loads having changed hands at this price. We quote revised prices as follows: Flour—Superior extra, \$5 00 to \$5 10; extra superior, \$5 20 to \$5 30; spring extra, \$5 05 to \$5 10; superfine, \$4 65 to \$4 75; strong bakers, \$5 75 to \$6 20; fine, \$4 75 to \$4 80; middlings, \$3 50 to \$4 00; pollards, \$3 20 to \$3 40; oatmeal, \$2 55 to \$2 70; city bags (delivered) \$3 00 to \$3 05. Meal, etc.—Oatmeal, per bushel, \$4 40 to \$4 50; cornmeal, white, per bushel, \$3 00 to \$3 05; cornmeal, yellow, per bushel, \$3 00; buckwheat flour, per 100 lbs., \$2 00 to \$2 20; bran, per ton, \$18; shorts, per ton, \$20 00 to \$22 00; mouffins, per ton, \$24 to \$24 1/2; pot barley, per bushel, \$5 75; pearl barley, per bushel, \$4 00 to \$4 50; split peas, per bushel, \$4 00 to \$4 25.

Flour and Lard.—A very good business has been done in New York during the past few days, the sale being reported of 300 bbls. at \$19, and several smaller lots at \$18 25 per bushel. Lard has been placed in round lots at 16, and in smaller parcels at 14 1/2 in pairs. The sale of 200 pairs was made yesterday at 16.

Stocks.—A few sales of hams have taken place at 12 1/2 c. per lb., but the demand as yet is very slow. Easter will bring out the demand. Eggs.—The receipts have been heavy during the past three days, but to-day they fell off considerably; but, owing to ample supplies, and only a moderate request, sales were made at 15 1/2 c. per dozen.

Maple Syrup.—The sale occurred to-day of a large lot at 75 per gallon, but prices range from 75c to 90c. Sugar.—A lot of about 3,000 lbs. of maple sugar has just been sold at 8 1/2 c. per lb., 8 c. at 10 c. being the full range.

Wool.—Wool is said to be slightly improving, several lots having been placed at \$1 95 to \$3 97 per 100 lbs. Falls are nominal.

Butter.—Latest advices from the English markets regarding butter are the worst that have been received for years, and goods on the other side have actioned off in Liverpool at a loss of 7 1/2 c. per lb. to the shippers on this side. Here we have no business to report in round lots, as shippers will not look at it. The cheese market is steady at 12 1/2 c. for small jobbing lots. The public cable from Liverpool is 70c. Prices here are as follows: Butter, old—Wholesale prices—Creamery, fancy to fine, per lb., 20c to 21c; townships, per lb., 17c to 18c; Morrisburg, per lb., 16c to 17c; Brockville, per lb., 15c to 16c; western dairy, per lb., 12c to 14c; Kamouraska, per lb., nominal, 11c to 13c. Cheese—Finest September, per lb., 13c to 14c; medium to good, per lb., 11c to 12c. For jobbing selections add 2c to 3c per lb. 10 lbs. above.

The Cattle Market.

MARCH 31st.

Cattle were 1c per lb. higher to-day, good butchers' stock selling up to 5 1/2 c. per lb., the range being from 5 to 4 1/2 c. per lb. live weight.

The following were the receipts of live stock at the Grand Trunk yards, Point St. Charles:—

Cattle Sheep Hogs Horses. For week ending March 26, 1780 ..... 305 At 179 90 For week previous ..... 459 141 17 130

Horse Market.

MARCH 31st.

The horse market during the week has been very active. The shipments from this city to the United States last week were the heaviest on record, amounting to 369 head, at a total cost of \$33,167, against 315 head costing \$30,159.50 for the week previous. The exports for the past four weeks are unprecedented in the history of the trade, footing up no less than 1,281 head, at an aggregate cost of \$118,524. From January 1st to March 26th the total exports were 2,480 head costing \$228,424.89. Dealers report a steady demand, and buyers are said to be less particular in their choice of quality. This accounts for the number of lower priced horses that have changed hands during the past week, when the average figure paid by American buyers was \$89.88, against \$95.70 for the week previous. Mr. James Walsh, of Peterboro', sold a carload of horses at the College street market during the week of prices ranging from \$110 to \$150 among which were several nice drivers weighing 1,000 to 1,050 lbs. which brought \$125 each, and some heavy draught horses averaging \$145 each. Mr. James Maguire sold during the week a heavy brown draught horse weighing 1,250 lbs. for \$165; a pair of bay horses 5 and 6 years old respectively, and weighing 2,300 lbs. for \$250; a fine bay mare, \$145; a grey mare, 5 years old, weighing 1,300 lbs., \$145; also a fine grey driving mare, 6 years old, \$175. A few others were disposed of at \$75 to \$80 each. Altogether about 45 horses changed hands at the above market. Quite a number were also bought at the American Horse yards. A carload of horses came in from St. Hyacinthe this morning, and the owner stated there are plenty more in that district if buyers will only pay the price. The following were the shipments from Montreal to the United States last week: March 21st—19 horses, \$1,730; 2 do, \$270; 15 do, \$1,316; 6 do, \$880.50; 17 do, \$1,319. March 22nd—14 horses, \$1,377; 10 do, \$1,590; 10 do, \$890; 10 do, \$1,030; 2 do, \$165. March 23rd—2 horses, \$184; 19 do, \$1,519; 18 do, \$1,275; 18 do, \$2,170; 21 do, \$1,329.50; 16 do, \$1,453. March 24th—27 horses, \$3,132.50; 19 do, \$1,074.50; 7 do, \$238; 2 do, \$200; 17 do, \$1,307.50; 8 do, \$250; 1 do, \$310; 7 do, \$185; 15 do, \$1,004.50; 3 do, \$257; 14 do, \$1,392; 2 do, \$175; 5 do, \$485; 19 do, \$1,199. March 26th—8 horses, \$833; 12 do, \$1,133; 10 do, \$1,002.

Two feet of snow fell at Umanaque on Wednesday night, being the heaviest fall this season. A bulletin at 9.30 a.m., yesterday morning stated Lord Beaconsfield passed a restless night, but was then much easier. Dr. Kidd remained throughout the night and was afterwards in consultation with Dr. Josia. Sixty-one victims of the Nine Opera House accident are made up as follows: French, 36; Italian, 30; Russian, 3; German, 1; nationality unknown, 1. Three victims were boys under 12 years, 4 girls, 24 male, and 13 female adults.

The maps of the state of Michigan have been compiled with the aid and advice of not less than 100 of the best informed lumbermen of that state, and from the aggregate of information supplied by them the following estimate has been made:—

Upper Peninsula east of C. & N. W. Railway ..... 2,000,000,000  
Upper Peninsula west of C. & N. W. Railway ..... 4,000,000,000  
Lower Peninsula ..... 20,000,000,000  
Total ..... 26,000,000,000

A recapitulation of these tables shows the amount of the three states named, in pine timber, to aggregate as follows:—

Minnesota ..... 6,150,000,000  
Wisconsin ..... 40,500,000,000  
Michigan ..... 26,000,000,000  
Total ..... 72,650,000,000

It may be boldly asserted that no more effective and reliable means of arriving at the truth in the matter have ever been taken, and while, from the nature of the case, exact figures can never be obtained, the Lumberman feels safe in endorsing the work which has been accomplished as approximating to the truth quite as closely as it is possible to come to it, and the result is fully in accordance with its often reiterated statements. When it is remembered that the aggregate cut and destruction of pine in the three states is not far from 8,000,000,000 feet per annum, it will be seen that the mathematical skill of a small boy will suffice to determine the question of how long the pine will last, and it but remains for the common sense of both manufacturer and consumer to determine what means shall be adopted by each to utilize the supply to the last degree of economy, and thus, if possible, prolong the duration; while the question as to present values, both of standing and manufactured lumber, cannot fail to awaken the attention of all who are interested. The source whence the data given above is derived entitles the figures to consideration not to be accorded to the work of a mere guesser, whose wish is often father to the assertion that the supply of pine is inexhaustible.—North-West Lumberman.

The new steam saw mill of Messrs. McLaughlin Bros., at Annapolis, says the local paper, is being pushed forward with vigour. The frame work is well under way, and will be ready for raising in a week or two. A large number of men are at work making excavations for the foundations and boiler house. The dimensions of the mill will be 150 feet in length by 80 in width, with a wing 32 x 40 feet and a boiler house 44 x 60 feet. The engine and boilers are being made by the Stearns Manufacturing Company, of Erie, Penn., and will be the largest ever placed in this section of the country. The engine will be 500 horse power, steam being supplied by seven immense boilers. The machinery will comprise a full complement of gits, circular and small saws, all of the latest patterns. The building will be constructed in a thorough manner, and when completed will be the finest mill on the Ottawa River, if not in the Dominion.—Central Canadian.

A Hartford, Conn., despatch states that a bill has passed the Legislature declaring cider an intoxicating beverage. A despatch says the Land League is endeavoring to organize local branches in Dublin, to bring pressure to bear upon traders. Intimidation is being practised, and some of the traders, fearing the League, give way.

JAS. ROBERTSON & CO. Dominion Saw Works TORONTO. Circular Saws, Gauge Saws, Butting Saws, Cross Cut Saws, Shingle Saws, Mill Saws. Manufacturers of Superior Quality Circular Saws, Circular Shingle Saws, Gauge Saws, Mill Saws, Butting Saws, Cross Cut Saws. INSERTED TOOTH SAWS A SPECIALTY. All Saws warranted to be made of Very Best Material, and only First-Class Workmen employed. SAW MILL SUPPLIES OF ALL DESCRIPTIONS SAWS REPAIRED RUBBER DRIFTING LEATHER DRIFTING. FILES, FILES, RE-CUT. EVERY WHEELS, GRINDSTONES. BADDITT METAL LABRATIONS, PACKING, FITTING. IRON TUBS, WHITE LEAD, ETC. TORONTO WORKS, 233 KING STREET WEST

R. H. SMITH & CO. (Successors to J. FLINT) SOLE MANUFACTURERS IN THE DOMINION OF CANADA OF THE "SIMONDS" SAWS. ST. CATHARINES, Ont. Sole Manufacturers of the genuine HANLAN, IMPROVED DIAMOND, IMPROVED CHAMBERLAIN, and the NEW IMPROVED CHAMBERLAIN CROSS-CUT Mill Saws from the cheapest to the very best. THE LARGEST SAW WORKS IN CANADA.

THE METAL TRADE.

THE BRITISH MARKETS.

(American Manufactures.)

The English iron markets have this week displayed satisfactory evidences. The reverse of the doctrine of evolution has appeared inasmuch as we have not steadily advanced, but on the contrary have receded. However, our retrogression has been of a piece with the experience making the past few weeks. The weakness of the market during the earlier period has been more marked than in the interval since my last. But of the present now quoted are distinct traces of the rising tide. Week by week prices are quoted in all centers. The extent of the drop upon the week in the Glasgow market is 1s. 6d., and in the Middlesex rough about 1s. At the same time, most domestic pig iron is quite 2s. 6d. per ton under the price that was demanded a week ago, and almost similar is the case with the current rates for Staffordshire, Derbyshire, Nottingham, Lincolnshire and the like descriptions. Nay, £1 15s. has been accepted for Cleveland forge pig. Yet, as will be seen further on, the lowest quotation for such pigs on the Middleborough market is to-day a fall on this. Low therefore, as are the open market quotations compared with what they were a few weeks ago, the rates at which some sellers of the iron are able to supply their requirements are very much more disastrous. It is utterly impossible that the iron can be made at anything like the money. The relief of the necessities which have compelled such prices does not terminate on the transactions immediately concerned. It is reflected in the prices which the makers of finished iron into which these pigs are going are accepting—prices which competing firms who are further removed from the source of supply of such raw material have to face with what ability they may. I have knowledge that pigs at this figure have last week been purchased for cash by makers of finished iron whose works are situated close to the port of Liverpool, and that the States buyers of hoops are amongst those who are experiencing the benefit of the extraordinary low prices at which some of the pigs of this country are now going into consumption. Cheap as the price would seem to be, £6 5s. per ton for hoops free on board in Liverpool ought yet to leave a margin of profit if they can be made of mixtures in which pigs at the prices I have mentioned bear a conspicuous proportion. But such prices of crude iron are exceptional and are unlikely to be of more than brief duration. In the struggle to compete with the minimum rates for pigs, the finished iron firms are sadly falling behind in the lockwater. I assert with little fear of contradiction that the fingers upon the hand holding the pen which indites these lines would more than represent the number of finished iron firms in the whole of South Staffordshire, Shropshire and East Worcestershire who by the finished iron they have made have profited in the past twelve months. Private firms with the results of whose Christmas stock taking I am familiar are only too competent to testify to their share on the results of the business that has been done, and balance sheets of limited liability firms yet to be presented will have even more unsatisfactory features I could point to one pig and finished iron firm, which is most carefully managed and where a long purchase and high reputation allow payment in cash for discount, and therefore makes the condition of buying most conducive to the buyer's interest—this firm, I say, have by the showing of their balance sheet lost 7s. 6d. upon every ton of finished iron sold, notwithstanding that the pig iron made at the firm's blast furnaces used up in the forge were priced to the finished iron department at 6s. per ton under cost. The result of the trading in the other three quarters of the year served only to bring the aggregate loss on the twelve months to a less depressed cost. How long is it to last? Is the question that is being put upon every hand. That it cannot last much longer is certain as to not a few firms, and as many more names are being bandied about with unpleasant freedom now as those which indicate the concerns to have "gone" on during the past few weeks. So is the loss on every ton of pig iron that was made in the five years of the trading of James McKewen of the Parkhead Furnaces, Woodside, Dudley. Happily his output was not very extensive, representing only £47,000 during that period. The loss is the more remarkable inasmuch as the bankrupt made cold blast iron mainly, and was, therefore, free from much of the competition which makers of the hot blast sort have to encounter. Sometimes he got £5 15s. per ton for his iron; at others, £5 6s., at others, £5. This was before September 1877. Then cold blast iron fell to £4 15s. This reduction was followed by a further drop in October, 1878, to £4 10s., and in July, 1879, to £4 6s. The common iron that Mr. McKewen made realized in March, 1876, £3 4s. per ton; but in 1879 the prices had gone down to £1 16s., and the debtor went to the wall, notwithstanding that during the last six months he had succeeded in again obtaining £5 5s. for his iron, and notwithstanding that at the time of his failure he had two contracts running at that figure. Accumulating stocks of pigs being the order of the day, and at once the cause and the evidence of the low quotations. It is not surprising that there should be an occasional off-market sale of 200 tons at the unremunerative rates which have been notified to me. 90,000 tons have been added to the stocks in the Cleveland district in three months ending with February. The increase for the month was 21,753 tons. It has given 11,235 into makers' stores, and 12,518 into warrant stores. The 120 furnaces blowing in the Cleveland group produced in February an aggregate of 203,951 tons. The failure of the Darling Iron Company (limited) was announced yesterday. The liabilities are not yet known, but they are believed not to be heavy. They include, however, one item of £35,000 still due to the vendor, Mr. Win Harningham, who sold the works to the company eight years ago for £275,000. The works were the largest for the manufacture of iron rails anywhere in the north, if not, indeed in the whole country. The first year the company announced a profit of £80,000, and paid 31 per cent. Subsequently, however, came the collapse of the iron rail industry and loss of money. During last year steel works were added to the company's premises. Through the sudden fall of iron and steel, of which the company had bought largely, and owing to repudiation of contracts by American customers, heavy losses were sustained, for which calls were made on the shareholders. There remains over £20,000 still to call. A week or two ago the company tried to raise £70,000 on debentures, but, failing in the attempt, they decided to stop trading. In a circular to the shareholders a scheme of reorganization is suggested. The south Staffordshire iron market is less firm on the week. The lower prices that are being accepted for finished iron by the Middlesex firms, together with the severe competition that Staffordshire finished iron firms are experiencing from Lancashire concerns whose supply of raw iron is obtained from the Cleveland group, had a

weakening effect on current rates in this district. Complaints have been made during the week against certain purchases of Cleveland forge pigs at considerably under the market price, to be used in competition with the South Staffordshire product. Prices of finished iron are from 2s. 6d. to 5s. down upon a fortnight ago. Common bars are easy to buy at from 2s. 16s. to 2s. Hoop iron being sold in Liverpool by some makers at under 2s. 10s. per ton. Sheets for galvanizing are 2s. 7s. for 24 w.g., and for ordinary merchant sheets (singles), 2s. 7s. is the quotation. Plate orders are difficult to secure even at a drop of 5s. per ton upon recent maximum for gilder qualities. Angle and T bars are down about 2s. on the fortnight. Market bars remain steady at 2s. 10s. to 2s. 2s. Pigs generally are easier than a fortnight back by from 1s. 3d. to 2s. 6d. Hematites are again steady, falling towards the quotations for all mine qualities. Good freestone hematites are procurable at under 2s. 10s. delivered in Staffordshire. All mine are quoted 2s. 2s. easy. Local sorts vary from 2s. 6d. to 2s. 10d.

THE LONDON MARKET.

The following were the closing prices in the London metal market March 4, 1881—

Table with columns for Iron, Steel, Copper, Lead, and Tin. Rows include various grades of iron (e.g., Bessemer, English, Swedish), steel (e.g., Bessemer, English), copper (e.g., Sheathing, Flat bottom), lead (e.g., English, Spanish), and tin (e.g., English, Straits).

There is this week but little change in the price of Bessemer blooms and iron scrap. What alteration there is, however, is towards ease. Blooms are £3 15s. to £8 per ton. Steel rail scrap ends at £4 to £3 17s. 6d. for export. The demand for old iron rails is hardly so strong, and deliveries of flange rails are being made from the continent into the London market at slightly less money. Wrought iron scrap is in diminished call from your side; from £4 6s. to £4 8s. per ton, e.g., has recently regulated sales for New Orleans. Old cast scrap is easy at £2 3s. to £2 5s. per ton.

UNITED STATES MARKETS.

Pittsburgh.

Pig Iron—Trade is perhaps even quieter than it was last week, and there is consequently a weakening in prices of inferior iron, but the better qualities are still held firmly. Indeed, it is difficult to see how the higher grades of iron can be made for less money than is now asked for them, when the extraordinarily high price of ore is considered; and in addition to this there are indications of a strike in the Connellsville coke district, which, if it occurs, may enhance the price of coke, thus further increasing the cost of making iron. The present quietude in the market is not caused by any decrease of activity at the mills, but the manufacturers of finished iron are drawing on their stocks purchased during the winter, waiting, apparently, till they can see more clearly the course of trade during the ensuing month. The frost and snows in the North-West have laid a protracted embargo upon trade of all kinds, but a week or two of fine weather will effectually raise the embargo, after which it may be expected that business will move off with great briskness, and the effect will be felt in all the avenues of trade. There is nothing to warrant a change in quotations, and we therefore repeat those of last week. Cold-short, \$21 50@22 50; neutral, \$22 50@23; extra neutral, \$23 50@24; cinder-mixed red-short, \$25; all-ore red short, \$27@27 50; Bessemer \$28 50@29; No 1 foundry, \$23 50@25; Missouri and Lake Superior warm blast charcoal, \$35; Hanging Rock cold blast charcoal, \$40@42; Hanging Rock charcoal foundry, \$29@32, as to quality—all four month's time.

Manufactured Iron—There is little or no change in the condition of the manufactured iron trade, nor will there likely be till the weather becomes more settled and the roads in better condition. We repeat the quotations of last week. Bar, 2 1/2 c, sheet, No 24, 3 3/4 c; tank, 2 60@22 70; boiler plate—C. H. No 1, 5 1/2 c, homogeneous steel, 6 1/2 c, hoops, 2 1/2 c. There is not much demand at present for hoop iron for oil barrels, but for whisky barrels the demand is good.

Nails—There was an adjourned meeting of the Western Nail Association Wednesday in their rooms here, but nothing was done in the way of changing prices. A letter was received from a party in the West, who says the demand for nails in that section this spring will exceed the demand in any other year since the Chicago fire.

Rails—The rail mill are as busy as ever. We have heard of no sales since last report, but steel may be quoted at \$23@24, cash, at mill, and light iron at \$18@20.

Railway Supplies—There is nothing new to report in respect to railway supplies, prices remaining as for some time past, as follows: Spikes, 2 1/2 c per pound; spikes bars, 2 1/2 c, track bolts, 3 1/2 c—all thirty days.

Steel—This trade presents much the same aspect it has for some time, demand being good, without any especial pressure upon the capacity of the works. We quote same as last week: Best quality refined cast steel, 11 to 12 cents per pound, as to quantity purchased; crucible machinery steel, about 7 cents; and Bessemer and open-hearth do at 6@7 1/2 cents; Bessemer and open-hearth spring 4@4 1/2 cents, and do plough 4 1/2@4 1/2 cents.

Old Rails—There has been no decline in prices of old rails within the last fortnight; on the contrary, they are fully as high, if not a little higher than they were two weeks ago. Ties may be quoted at \$29 50 and double heads at \$31.

Scrap Iron—Scrap is a little weaker than it was a few weeks ago. No 1 wrought is bought by consumers

at \$8@12 per ton, and railway machinery scrap is worth \$5 per ton. Cast iron scrap is worth from \$17 to \$25 per ton, and old car wheels \$15@30.

Philadelphia.

There is a general decline in the market though not as in prices extend no weakness in prices can be detected. There is in the first place no room for any decline, and in the second place, the consumption is such as to make a market for the entire product of the furnace. The large buyers are holding off, and those who are cutting into contracts for future deliveries are doing so in a cautious manner and with an eye to every possibility. Last January the trade rested under the apprehension of a probable material advance in iron and hence bought quite freely. Sellers therefore anticipated a similar active month when the time came for the renewal of contracts for the second quarter. In the meantime other causes intervened, the chief of which were prolonged obstruction of traffic, and second the flatness of the English market, which failed to do proper note of the discontinued American demand. There has been more or less activity among buyers. All are satisfied prices have reached bed rock, and hence are buying for immediate wants. Under other conditions a speculative feeling would seize the market, but make to do not risk the results of an advance in prices at present. They must grin and bear narrow margins and take. Milwaukee chances. Sales of No. 1 foundry were made at \$25 to \$26. No 2 at \$22 and gray iron at \$20 50 to \$22, delivered. There is very little desire to cut into contracts for future deliveries on these figures. A sale of 2,000 tons Bessemer pig took place last week, and other lots will be sold later. English iron continues to be sold in small lots at \$18 to \$20. Scotch pig iron at \$22 to \$23.

Wrought Pipe and Tubes—Discounts are 65 for pipe and 40 for tubes, with a fair volume of business moving.

Plate Iron—The plate mills are taking a good share of business. Prices are low, but as compared to a month ago, an improvement has taken place. Several hundred tons have been placed for western shipment. The demand for ship plate is even better, and new orders are coming in. Both bridge plate and boiler plate iron is being sought after, occasionally in large orders at slightly improved prices. Tank rules about 2 1/2 c; boiler plate, 3 c; for shell, 4 c for flange, and 5 c for fire box. An improvement is looked for.

Steel Rails—The mills are taking orders for steel rails, notwithstanding their condition, but deliveries are long postponed. The demand is still in excess of capacity, but it is believed in a few months more the needs of consumers can be properly attended to. A good deal of business is reported going abroad yet, and there is no help for such of it as requires summer delivery. Large supplies are now being shipped to southern points. Quotations have been made all the way from \$50 to \$70.

Iron Rails—The demand for iron rails has improved, and a large volume of business is in sight at about \$47. Foreign makers are soliciting American trade with some success, and large orders are being filled for western roads. It is stated that American mills are endeavoring to meet the views of buyers who are in the market for large supplies.

Old Rails—The demand has been irregular, but holders have been firm, and in some cases sales of a few thousand tons have been effected at a slight advance. Buyers are not disposed to purchase freely, supplies seem to be on the decline, and the advantage, temporarily with sellers. Small lots sold this week at \$27 75, and for May deliveries \$27 50 is offered, but consumers have present wants supplied.

Scrap—The fair weather is permitting the accumulation of large supplies, and in consequence there has been a very perceptible weakening in prices and a falling off in demand. Buyers are waiting to see what the effect will be of the accumulating supply, and do not buy much at any price. Holders are willing to take \$28@29 in store for choice lots, \$20 for cast and \$17 for store plate.

Steel—Agricultural and tool steels especially are in quite active demand. Considerable competition prevailed during the winter and spring, but now that a pretty strong spring trade is at hand an improvement in prices obtained is apparent all round. The mills report increasing business, with an upward tendency in prices for grades in most urgent request.

New York.

Pig Iron—American. The amount of new business coming to notice is no larger than it has been for quite a little time past, and the only feature affording the least encouragement is a slightly better demand from the smaller consumers who rarely buy except in a moderate way beyond what is found necessary to satisfy current requirements. It is generally asserted that large amounts of supply are moving off on old contracts, and, if the statements of more than a few in the trade were what there is reason to believe they are not, it would still have to be said that the furnace companies will take but few orders, and those few only at high prices. One of the most conservative and reliable commission firms state, however, that a pretty good amount of No 2 X foundry (prime brand) can be secured for delivery during the year (from the present time until January next or at any intermediate date) at a lower price than most holders are quoting, while another equally high standing firm gives it to be plainly understood that they can secure more No. 1 X foundry (also prime brand) at \$24 50 than there appears to be buyers for. Giving due weight to the various reports, and making proper allowances for the personal interests at stake, leads to the impression that the market is actually a little weaker than it was at the opening of the year, though there is nothing in the way of business to justify making lower quotations than those given during three months' time. A great deal of the iron sold early in the year for forward delivery is to be settled for at the current prices at the time of delivery, and as considerable amounts secured in this way are yet to move off there is naturally a strong effort to keep values up. For that matter some of the large companies are taking prompt delivery orders on the quiet from time to time, and in point of fact are probably not, as a whole, so greatly burdened with actual orders as they would have it appear. The range of prices on prime brands is \$24 50@25 50 for No 1 X foundry, \$22@23 for No 2 X foundry, and \$20@21 for gray forge.

Scotch. The purchases are still confined mostly to trifling amounts, and the market is looking somewhat easier under more disposition to sell on the part of some holders who bought a few lots previous to arrival at comparatively low prices. For the present the quoted prices are about \$21 50 for Eglington, \$23 for Glasgow, \$23 50 for Gartsherrie, \$23 50 for Summerville, and \$24 for Coltness.

English. Of No. 3 Middleborough probably 600 to 700 tons have been sold at about \$18 50, which price seems the best for lots of 100 to 500 tons. For large lots not within 25c or 50c of that could be obtained. There has been nothing of importance done in Bessemer, and in the absence of business about \$26 to \$28 50 are the nominal prices.

Scrap Iron—There has been very little done in the past week, but in the absence of orders for No. 1 wrought continues to rule strong, at \$32 to \$30 per yard. Cast borings quoted at \$2 1/2 to \$3 stove plate at \$10, cast machinery at \$10, and of 1 1/2 wheels at \$10 to \$12, as to common.

Plate—Not many important amounts of business appear to have been placed lately, owing, it is alleged, to the inability of the mills to take orders at satisfactory prices. The quoted prices are \$22 at mill, for steel, and \$16 to \$18 for heavy iron. Considerable foreign rails are reported to be taken in a quiet way, but nothing reliable of the kind can be obtained.

Old Rails—A rather more liberal movement has been effected the past week, but in nearly all cases the amounts were too small to have a great influence upon the market. Today's closing sales were \$27 50 for T and \$23 for double heads. The week's sales embrace 2,000 tons P.H. at \$27, 1,000 tons at \$30, and 1,000 tons do. at \$30 at Jersey City, 1,000 tons at \$27, 1,500 tons do. at \$27 50 spot and to arrive, 1,000 tons do. at \$28 wharf in Philadelphia, and 1,000 tons do. at \$27 50 in store do.

The thing which envelops the paper maker, the shirt collar we wear, the boat in which we sail, the car wheel which revolves and bears us along, I know not how many other uses, all come from the pulp of the paper maker, and there seems to be no limit to its employment but the supply of the substance of which it can be made.—Charles Merriam.

A Berlin professor has found a new use for waste of soda. On being mixed with glue and hydrochloric acid a substance is formed which may be drawn out into very thin sheets. It has been used instead of albumen in fixing aniline colored calico printing, rendering the fabric incombustible. It is highly probable that it may yet be applied in the manufacture of paper.

A Washington dispatch says:—Values of cotton and broadstuffs for February, \$13,919,000; for February of last year, \$19,427,600. Fifteen thousand immigrants arrived in this country during February. The number of immigrants that arrived during the eight months ending February 28th, were from Germany, 82,680; Canada, 77,218; England and Wales, 30,276; Ireland, 30,164; Scotland, 8,018; China, 3,517; all other countries, 9,743.

It is to an Englishman of the name of John Baskerville that the invention of vellum paper is attributed. It is so named because it is like vellum in its whiteness and evenness, or smoothness. Though several attempts were made in France to fabricate this paper toward the close of the last century, there never was but one man, a manufacturer at Annonay, named Montgouier, who ever succeeded in making vellum paper to the country.

Russia is said to be inundated with paper from Finland, whose production largely exceeds its consumption. The Russian paper maker is also obstructed in his business by the numerous holidays in that country, only about 224 days' work being performed in Russia during the year, entailing a loss to Russia in all kinds of business something like 6,000,000 roubles per annum. Intemperance interferes largely with the attempt of the Russian paper makers to compete with Finland.

The statement has been made that the use of postal cards has decreased the sale of writing paper in the United States \$12,000,000 annually. In the first place, according to figures given by the Springfield Republican, the sale of writing paper has not decreased at all; and in the second place, the amount now manufactured in a year is not worth \$10,000,000 including that used for blank books, envelopes and other purposes requiring sized paper. Last year the Government sold 203,000,000 postal cards.

The importance of the beer brewing industry in Wisconsin may be seen from the brewers of Milwaukee, which last year paid \$700,000 to the Federal Government in revenue taxes, \$30,000 for city, county and school tax, \$336,000 for transportation companies for freight, and \$192,000 for cutting and storing ice, besides buying 1,750,000 bushels of barley and 1,000,000 pounds of hops. They support 500,000 of Milwaukee's population, and by their consumption of barley and hops furnish a valuable market to the farmers of the state.

The Chicago Inter-Ocean publishes a resume of pork packing in Chicago for the past season, which is the largest ever known. The aggregate number of hogs packed during the summer season was 2,911,112, showing an increase of 815,709 as compared with returns of the summer of 1879. The number of hogs packed during the winter season was 275,106, an increase of 252,845 as compared with the winter season of 1879-80. The aggregate number of hogs reported packed during the twelve months ending March 1st, 1881, was 3,186,218, or an increase of 1,071,554 as compared with the previous year.

The Halifax Coal Mining Company are vigorously pushing forward the work at their new shaft near the scene of the recent disaster at Stellarton. The cage pit has been filled with carbonic acid gas, and the fire is probably extinguished by this time, but the exact state of the cage pit will probably not be known until the Ford pit is sufficiently lowered to reach the drifts between the two, which, if they are not choked up, it may be ascertained whether or not the cage pit is still on fire. The water in the Ford pit has been lowered altogether thirty feet, and is being lowered at the rate of six inches per day.

Dr. T. L. Filpson sends the following on the rusting of iron to the Chemical News:—A correspondent has found that iron and steel do not rust when immersed in solutions of caustic soda and caustic potash, but he appears to have been unable to discover any explanation of the fact in the books and journals to which he has access. 'I cannot understand,' he says, 'why the alkali in the solution prevents the oxygen in the water acting on iron or steel.' The fact has been known for a great many years, and the true explanation was pointed out, I believe, for the first time by the late much regretted Dr. Grace Gilbert, to whom modern chemistry is indebted for much useful work. Dr. Gilbert's explanation is in strict accordance with the theory propounded some several years previously (1824), in my paper on catalytic force. His experiments showed that the phenomenon of the rusting of iron was due to the presence of carbonic acid, this body forming the third substance requisite, according to my theory of catalysis, to complete the galvanic chain. Without the presence of this carbonic acid, or some third substance capable of taking its place, the oxygen cannot combine with the iron at ordinary temperatures. A high temperature acts like electricity in promoting the combination. As long as there is free caustic alkali present, of course there can be no carbonic acid, and no rust is formed.

RAILWAY MATTERS.

AMERICAN RAILWAYS BENEFITED BY PROTECTIVE TARIFF.

It is from a conversation between Mr. John R. ... and Mr. John R. ... that the following facts have been ascertained by a ...

The engine connected with the Pennsylvania railroad has reported the result of a careful inquiry into the duration of steel rails. It is found that the soft steel rails wear away less than the hard steel rails. This is because the little particles which rise on the face of the steel tend to break off under the wheels when the rail is laid and hammer down in its use.

The comparative earnings of the Northern Central Railway Company for February were: Gross earnings \$82,571.42; operating expenses \$247,000.00; net earnings \$145,571.42. Increase of \$11,001.27 as compared with February 1889. The gross earnings for two months ending February 28 were \$168,813.83; operating expenses \$491,801.28; net earnings \$277,012.55; an increase of \$36,813.83 as compared with the corresponding period of last year.

The Toledo, Cincinnati & St. Louis Railway Company has filed articles of consolidation with the Indiana State Secretary, capital, \$3,000,000. George William Ballou, of New York, heads the directors. The road is completed to Kokomo under the name of the Toledo, Delphos & Burlington, and will run from Kokomo south-westerly through Crawfordville and Sullivan. The Dayton & South-eastern constitute the Cincinnati branch and another branch is intended to tap Indianapolis, via Marion.

Work will be resumed on contract 15, Canada Pacific railway, on the 15th of April, under the direction of Mr. M. J. Haney, construction superintendent. There will be three steam shovels working, one at Oatensand, one at Lake Decapton, and one at Cross Lake. The work remaining to be completed is now confined to filling in and ballasting, and will be done with trains. Five hundred men will be employed, and the intention is to complete the work during the coming summer, and also the ballasting remaining to be done on Contract 14.

The directors of the Delaware, Lackawanna and Western Railroad Company have declared a dividend of 1 1/2 per cent, payable April 1st. The earnings of the company during January and February equal 1.69-100 per cent on stock, those for the current month are not yet ascertained. The company has paid the first mortgage, due March 1st, of about \$1,000,000, and has not issued new bonds in their place, having borrowed at a low rate of interest what its earnings did not give them. The company has also paid \$500,000 of the Morris & Essex bonds called in and due, using in their stead about \$400,000 of the consolidated bonds which are issued at a large premium to take them up. The profit of the year ending December 31st last was 68-100 per cent on the stock, or \$2,270,089.89.

The following is a comparative statement of the business of the Philadelphia & Reading Railroad, and the Philadelphia & Reading Coal & Iron Company for the month of February, 1891. Philadelphia & Reading Railroad Company, 1891, gross receipts from all sources, \$1,129,427.69; gross expenses, \$805,106.33; net profit, \$324,321.36; gross receipts from all sources, \$1,085,101.78; gross expense, \$687,273.63; net profit, \$397,828.15. Philadelphia & Reading Coal & Iron Company, 1891, receipts, \$303,025.03; expenses, \$793,544.20; 1890, receipts, \$530,472.33; expenses, \$609,559.69; loss, \$79,087.36. During February the company mined from its own and leased lands 338,072 tons of coal, total for the year to date, 978,544 tons; February, 1890, 221,169 tons, total for 1890, for the same period, 956,317 tons.

The Napierville Junction Railway and Quarry Company held a meeting last week, and subscribed \$10,000 stock to complete the line and develop the stone quarry. Mr. Robert Cassels was appointed president.

The following are the earnings of the Milwaukee, Lake Shore & Western Railway for the first six months of the fiscal year. July 1 to December 31, 1889, \$2,592,921; July 1 to December 31, 1879, \$1,772,425. Increase \$820,496.

The following are the comparative earnings of the St. Louis & San Francisco Railroad: Week ending March 21, 1891, \$58,500; week ending March 21, 1890, \$41,000. Increase, \$17,500. January 1 to March 21, 1891, \$243,667; January 1 to March 21, 1890, \$253,444. Decrease, \$9,777.

The city council of Halifax, in special session, passed the necessary civic legislation providing right of way through Water street, and giving the city property adjoining West wharf for bringing the property to the deep water terminus and erecting an pier thereon.

According to the annual report of the Chicago, Burlington & Quincy Railroad for the year ending December 31st the road earned \$20,435,042. The operating expenses and taxes amounted to \$28,414,493. Net earnings, \$8,020,549. During the year there has been expended for new tracks, extensions and equipments \$1,282,809.

The engine connected with the Pennsylvania railroad has reported the result of a careful inquiry into the duration of steel rails. It is found that the soft steel rails wear away less than the hard steel rails. This is because the little particles which rise on the face of the steel tend to break off under the wheels when the rail is laid and hammer down in its use.

The comparative earnings of the Northern Central Railway Company for February were: Gross earnings \$82,571.42; operating expenses \$247,000.00; net earnings \$145,571.42. Increase of \$11,001.27 as compared with February 1889.

The Toledo, Cincinnati & St. Louis Railway Company has filed articles of consolidation with the Indiana State Secretary, capital, \$3,000,000. George William Ballou, of New York, heads the directors.

Work will be resumed on contract 15, Canada Pacific railway, on the 15th of April, under the direction of Mr. M. J. Haney, construction superintendent.

The directors of the Delaware, Lackawanna and Western Railroad Company have declared a dividend of 1 1/2 per cent, payable April 1st.

The following is a comparative statement of the business of the Philadelphia & Reading Railroad, and the Philadelphia & Reading Coal & Iron Company for the month of February, 1891.

The Napierville Junction Railway and Quarry Company held a meeting last week, and subscribed \$10,000 stock to complete the line and develop the stone quarry.

The following are the earnings of the Milwaukee, Lake Shore & Western Railway for the first six months of the fiscal year.

The following are the comparative earnings of the St. Louis & San Francisco Railroad: Week ending March 21, 1891, \$58,500; week ending March 21, 1890, \$41,000.

The city council of Halifax, in special session, passed the necessary civic legislation providing right of way through Water street, and giving the city property adjoining West wharf for bringing the property to the deep water terminus and erecting an pier thereon.

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POSTAL TIME-TABLES.



Post Office, Ottawa, Canada.

ARRIVAL AND DEPARTURE OF MAILS.

Table with columns: Mail, Class, Delivered. Lists various mail routes and their delivery times.

Registered matter must be posted half an hour previously. Office hours from 8 a.m. to 5 p.m. For Savings Bank and Money Order business, 8 a.m. to 4 p.m.

Post Office, Montreal.

MONTEAL, July 5, 1890.

Table with columns: DEPARTURE, MAILS, CLONING. Lists mail departure times.

ONTARIO & WESTERN PROVINCES. Ottawa by railway 8 15, 8 00. Provinces of Ontario, Manitoba & British Columbia 8 15, 8 00.

QUEBEC & EASTERN PROVINCES. Quebec, Three Rivers, Berthier and Sorel, by Q.M.O. & L.R. 1 50, 4 00, 8 00.

LOCAL MAILS. Beauchemin Route 6 00. Boncherville, Contrecoeur, Veronneau and Verchères 6 00, 1 45.

UNITED STATES. Boston and New England States, except Maine 6 00, 5 45. New York and Southern States 6 00, 2 15 & 3.

GREAT BRITAIN, ETC. By Canadian Line (Friday) 7 30. By Canadian Line (Sundays) 6 00.

WEST INDIES. Letters, etc., prepared in New York are forwarded daily on New York, whence mails are dispatched for Havana and West Indies, on Havana, every Thursday pm 2 15.

Postal Car Boxes open till 4 1/2 a.m. and 9 15 p.m. The Street Boxes are visited at 9 15 a.m., 12 30 p.m., and 7 30 p.m.

Registered Letters should be posted 15 minutes before the hour of closing ordinary Mails, and 30 minutes before closing of English Mails.

TO MALTSTERS.

THE undersigned beg to inform maltsters and the trade that, having lately added new and powerful steam machinery for the special purpose of weaving extra strong STEEL WIRE LATH for malt and drying kiln floors, are now prepared to quote prices for the above goods. These floors are much more economical than iron tiles, saving from 30 to 40 per cent in fuel and labor, and producing a brighter sample of malt.

TIMOTHY GREENING & SONS, DUNDAS, ONT. 13-28

RAILWAY TIME TABLES.



Canada Central Railway.

CHANGE OF TIES.

On and after MONDAY, 24th JUNE, 1890, the following trains will run: Express Train from Toronto to Ottawa, leaving Toronto at 11 20 a.m. and arriving at Ottawa at 1 10 p.m.

ST. LAWRENCE AND OTTAWA RAILWAY. On and after THURSDAY, 10th JUNE, 1890, trains will run as follows: LEAVE OTTAWA. For the East, West, South and South-East 11 15 a.m.

Q. M. O. & O. RAILWAY. COMMENCING on Wednesday, June 22nd, 1890, trains will run as follows: Leave Hochelaga for Hull 1 00 a.m., 8 30 a.m., 5 15 p.m.

INTERCOLONIAL RAILWAY. SUMMER ARRANGEMENTS, commencing 11th June, 1890. Through Express Passenger Trains run daily (except Sundays) as follows: Leave Point Levis 7 30 a.m., 1 00 p.m., 2 03 p.m.

THOS. WILSON Dundas, Ont. Manufacturer of STATIONARY and PORTABLE STEAM ENGINES.

BOILERS and MACHINERY of every description. COTTON MILL CALENDERS, HOSEIERY STEAM PRESSES AND PROPELLER WHEELS, ALL SIZES.

Laid paper, especially linen, is preferred by buyers of taste to the highly calendered paper. The fancy for the smooth, glossy surface is waning, and the much more elegant and durable deal surface on both writing and printing papers is now fashionable.

PETROLEUM.

THE BRITISH MARKETS.

W. H. BROWN & CO.'S PETROLEUM REPORT  
London, Mar 11th, 1891

Crude Petroleum Oil—New York standing a continued good demand on the stocks... The market closes quiet spot oil to 7 1/2... Naptha—quiet.

London—No business.  
Turpentine—has been steady... The stock at the wharves to-day is 12,000 barrels and deliveries for the past week are 801 barrels.

PETROLEUM OIL

Table with columns for Stock this day, Landed last week, Delivered last week, and sub-columns for Refined and Crude.

COAL OIL

Table with columns for Stock this day, Landed last week, Delivered last week, and sub-columns for Refined and Crude.

Above represents stocks and movements at London and houses here Public Wharves only.

THE CANADIAN MARKET.

(Petrolia Advertiser.)

During the past week the demand for crude has been active... Prospects at Oil Springs indicate a lively summer in drilling operations.

The market here for crude oil by the car load is from \$1.65 to \$1.70 per barrel... The market for refined is not very brisk just now.

The above are wholesale prices per Imperial gallon, at which refined oil is sold by the car load... The lat-est refined oil quotations in New York market are as follows.

REFINED OIL MARKETS.

Table with columns for Location (London, Toronto, Ottawa, Montreal, Quebec, Halifax) and Price per gallon.

The above are wholesale prices per Imperial gallon, at which refined oil is sold by the car load.

The lat-est refined oil quotations in New York market are as follows: Cargo lots for export, 110° burning test by the Seybold tester, 8 1/2c.

PETROLEUM PRODUCTS

Table with columns for Product (Lubricating, Kerosene, Oil, Paraffine Candles, Wax) and Price per unit.

—Mr. Edward Kelly, of Winnipeg, was at the Grand Central Hotel, Ottawa, lately and bought a car load of horses for the North West.

—The total receipts of the Great Western Railway for the week ending March 25th was \$110,787, against \$106,546 for the corresponding period last year.

THE MONEY MARKET.

DOMINION STOCK REPORT

Large table with columns for BANKS, INSURANCE, &c., DEBENTURES, &c., INTEREST PAYABLE, and WHERE PAYABLE. Lists various financial institutions and their stock values.

MONTREAL STOCK REPORT.

Table with columns for NAME, SHARES, CAPITAL SUBSCRIBED, CAPITAL PAID-UP, REST., DIVIDEND LAST 6 MONTHS, and CLOSING PRICES. Lists various Montreal-based companies.

NEWFOUNDLAND.

Hon J J Ferguson, in his annual budget speech, showed that the revenue of Newfoundland for 1890 was \$928,505, a decrease of over \$60,000 as compared with 1879.

DO SILVER MINES GROW RICHER WITH DEPTH?

The question is often asked why silver mines usually grow richer as they grow deeper. Facts are worth more than theories, and the account of some assays lately made may throw some light on the lack of silver at the top of veins, especially veins of sulphuret ores.

DOMINION TRADE REGISTER AND INDUSTRIAL DIRECTORY.

Extensive directory listing various industrial and agricultural businesses, including Agricultural Implements, Aniline Dyes, Brass Works, Cotton Brokers, Cotton Mills, Edge Tools, Engines and Boilers, Furniture, Glassware, Glove Manufacturers, Iron Works, Knitting Mills, Leather Belting, Paper Manufacturers, and Woolen Manufacturers.

THE DRY GOODS TRADE.

NEW YORK ADVICES

Notice.—The following are the two principal... The following are the two principal... The following are the two principal...

No. 4 Sales compared with March, 1890... No. 5 Sales compared with March, 1890... No. 6 Sales compared with March, 1890...

Table listing various goods and their prices, including Antelope, Deer, Moose, and Skunk skins.

The Wool Trade.

The action of the trade in their anxiety to realize... The action of the trade in their anxiety to realize... The action of the trade in their anxiety to realize...

Furs, Skins, etc.

Quant to the London sales business the past week... Quant to the London sales business the past week... Quant to the London sales business the past week...

LONDON ITS SALES

Below we give in regular series the telegrams... Below we give in regular series the telegrams... Below we give in regular series the telegrams...

THE BELFAST LINES TRADE

The Belfast Lines Trade Circular of March 5, with... The Belfast Lines Trade Circular of March 5, with... The Belfast Lines Trade Circular of March 5, with...

HOW DRY GOODS CUSTOMERS ARE CALLED

To call upon the New York... To call upon the New York... To call upon the New York...

HOW CATTLE ARE SHIPPED.

The Pittsburgh Stockman gives the following account... The Pittsburgh Stockman gives the following account... The Pittsburgh Stockman gives the following account...

EASTERN WOODS AND TIMBERS

The following remarks on the above subject are... The following remarks on the above subject are... The following remarks on the above subject are...

HOW DRY GOODS CUSTOMERS ARE CALLED

To call upon the New York... To call upon the New York... To call upon the New York...

THE FRENCH TRIP OF 1907

It was mentioned in the letter of our... The French Government has established the importance of pork from the United States... The modern knowledge of trichinosis, and the steps by which that knowledge has been gained...

It is a common error to think that the French... The French Government has established the importance of pork from the United States... The modern knowledge of trichinosis, and the steps by which that knowledge has been gained...

LAGER BEER.

Lager beer, the beer of Bavaria, is prepared by a slow process of fermentation from strong infusions of malt, barley and hops, and grape sugar or glucose... The beer is usually fermented in winter, as it requires a temperature of not more than from 40° to 50° Fah.

THE DAIRY INDUSTRY.

The magnitude of the dairy industry in this country is shown by statistics compiled by Mr. Geo. P. Lord, of Elgin. He estimates the number of milch cows in the United States at over 13,000,000, requiring the annual product of \$2,000,000 acres of land for food...

log the value of the milk product, and 400 gallons as the average per annum... The total weight of production is 14,000,000,000 pounds of milk... The total weight of production is 14,000,000,000 pounds of milk...

BUTTER AND CHEESE IN ENGLAND

Col Albert D Shaw, United States consul at Manchester, formerly of Toronto, in his annual report to the Department of State, thus speaks of American butter and cheese... The remarks will apply to Canada's products as well.

THE SUGAR TRADE.

The despatches from Cuba report great damage to the sugar and coffee plantations by frost. The loss will reach \$2,000,000.

The estimated crop this year in Louisiana is thirty-eight thousand hogheads of sugar and thirteen million gallons of molasses.

The Havana Weekly Report, speaking of the Cuban crops, says: Sugar.—The grinding has continued all over the island without any noticeable interruption...

Table with 2 columns: Country, Production. Rows include Great Britain, France, Germany, Belgium, Holland, and Africa.

DEMERARA MARKETS

In the circular of Messrs. Welling & Co., Georgetown, Demerara, February 25th, we find following—

Sugar—Most of the estates have stopped grinding and will not resume for a month... Dark Crystals, last sales at \$5 35 to \$5 50...

The weather has been very dry since last week... The parched appearance of the fields from the want of rain is anything but satisfactory...

Exports.

Table with 2 columns: Item, Price. Rows include Muscovado, Common to good, Vacuum Pan, Dark No 7 to 10, etc.

MOLASSES.

Table with 2 columns: Item, Price. Rows include Coloured—Not less than 40 per cent., White—Not less than 40 per cent., etc.

(Per Imperial Gallon, Casks included.)

Table with 2 columns: Item, Price. Rows include Dark Centrifugal—None, Vacuum Pan—Wanted but scarce, etc.

Wallahe Shingles—\$2.75 to \$3.50 per M as in quality

COST PER HORSE POWER.

Bissinger, the well known German engineer, gives the following results as obtained from an examination of various motors in regard to the relative cost per horse for each hour...

MICROPHONIC TIME.

The microphone of Professor Hughes has been introduced by Dr. Wilhelm Meyer into the Geneva Observatory for the purpose of transmitting the beat of the standard clock to different rooms in order that the staff may time their observations on the heavenly bodies by the same pendulum...

HEAT AND MATTER

Fuller's discovery of Saturday evening... the law of attraction... the discovery that cohesion and adhesion are due to the same law...

ELECTRIC WONDER

A Paris dispatch, several successful... the machine has the appearance of a small piano... the machine is a key board of 10 notes...

ANCIENT MINERS' TOOLS

The miners of the Silver Belt Mine have made a remarkable discovery showing that the mine was worked long ago... the ten foot bonanza recently uncovered...

FRESH AIR IN THE BEDROOM.

How much air can be safely admitted into a sleeping or living room is a common question... the air which enters at night into a sleeping chamber should be admitted gradually...

HOW ENGLAND'S GREATEST HEIRESS WAS WON.

We take the following from the New York Sunday Evening of February 14th... Fashionable society will be here for the first time that the Baroness Countess...

to his mother in England... the Baroness Countess... the young man who carried off the richest heiress in the world...

—The Province of British Columbia has given a loan of \$500,000 to assist in the establishment of a woolen mill in the province... The question now occupying attention is, where shall the mill be located?

—The Stranor (Pa.) Register of the 12th inst. says: Mr. G. Clark, one of the directors of the Leawards Iron and Coal Company, was agreed to purchase a short time ago by a check for \$100,000 from the iron company...

—A Kandahar dispatch says: A formidable rebellion prevails in Herat... the result of a private quarrel... At last accounts the rebellion was so formidable that Akoub Khan was virtually besieged in the capital...

—The following are the new rules respecting the tender of flour adopted by the Board of Managers of the New York Produce Exchange... the tender as to time shall be on notice from the seller to the buyer...

—An automatic brick making machine of great efficiency and power is among the recent English inventions... the driving pulleys move at a high speed, and the first shaft, which is carried on an outside bracket...

—A Paris firm has lately patented a peculiar method of generating steam for a steam engine... the stroke of the piston a certain quantity of water is projected against two strongly heated metal plates...

—A young man who carried off the richest heiress in the world... the young man who carried off the richest heiress in the world... the young man who carried off the richest heiress in the world...

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THE DOMINION BOLT CO.

Machine-Forged Nuts, Hot-Pressed Nuts, Carriage Bolts, best, Plain Bolts, Machine Bolts, Coach Bolts, Bolt Ends, R. R. Track Bolts, Single Shoe Bolts, Boiler Rivets, Bridge Rivets, Roof Bolts, R. R. Spikes, Blank Bolts, Bridge Bolts, Spring Bolts, Norway Carriage Bolts, Tire Bolts, Bright Rivets, Store Bolts. The quality of the iron, finish of the bolts, and the style of packages, is SUPERIOR TO THE AVERAGE.

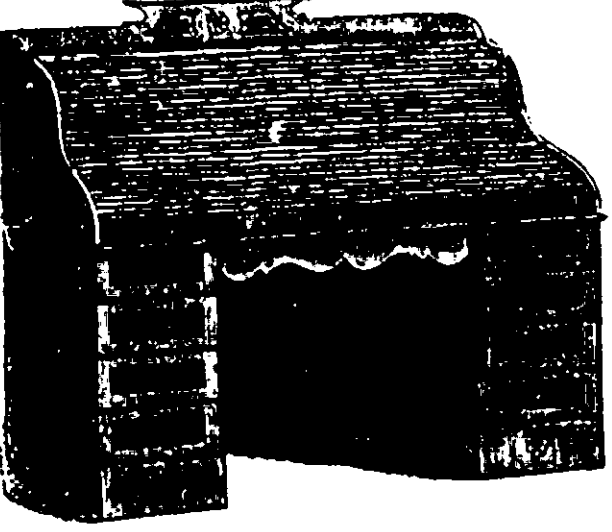
JAMES WRIGHT & CO. CHURCH, BANK, HOUSE, STORE AND OFFICE FITTINGS. Art furniture and interior floors, etc. SEND FOR FULL CATALOGUE. 11 TO 17 HERMINE ST., MONTREAL.

CASTORINE OILS MACHINE OILS NONE GENUINE UNLESS BRANDED (TRADE MARK) CASTORINE (REGISTERED) MANUFACTURED BY TORONTO OIL CO. 25 SHERBORNE ST. TORONTO.

TEES & CO.,

Montreal.

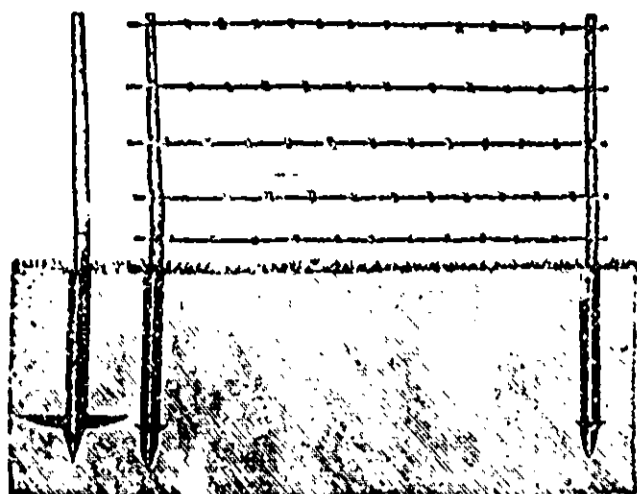
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**COUGHLIN'S**  
 PATENT FROST AND FIRE PROOF  
**IRON FENCE POST**  
QUALIFIED IN THE UNITED STATES AND CANADA  
 THE GREATEST INVENTION OF THE AGE.



For details on other Wire Fences, etc.  
**BEST, CHEAPEST AND MOST DURABLE**

PRICE POST EVER INVENTED BY US IS 1/2 CENT PER FOOT. THE GREATEST INVENTION OF THE AGE.

VERY LOW FIGURE.

Particulars send for circular. Local Agents, or obtain our rights, please apply once to

P. COUGHLIN, PRESCOTT, ONT.

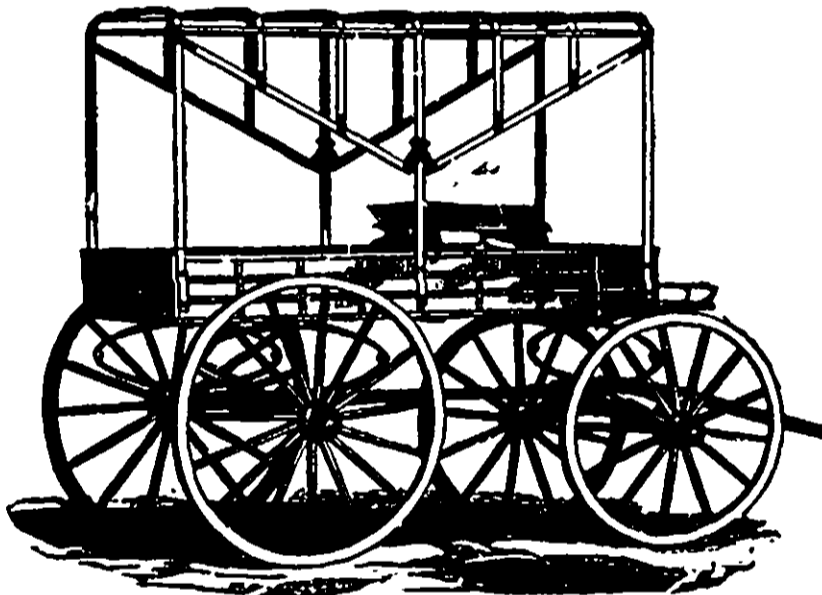
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MANUFACTURERS OF THE  
**DETROIT EMERY WHEEL.**  
 Each Wheel strengthened by a Brass Wire Web inserted. Send for Price List and Circulars.  
**Hamilton, Ont.**

Bronze Medal and First Prize at Toronto Industrial Exhibition, 1880.

**THE CELEBRATED**

NATIONAL MANUFACTURING CO.



202 SPARKS STREET, OTTAWA.

**NOVELTY WAGGON TOP.**

SEND FOR ILLUSTRATED CATALOGUE.

**McCOLL BROS. & Co.**

TORONTO,

Were awarded the FIRST PRIZE for their LARDINE and other

**MACHINE OILS**

At the great Industrial Fair, Toronto, 1880, and

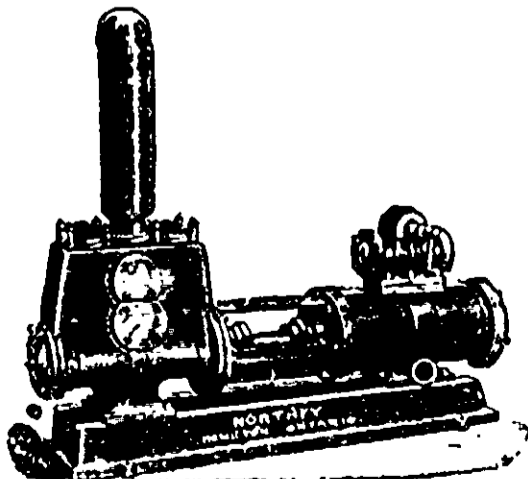
**Four First Prizes and Gold Medal**

At the Provincial Exhibition, Hamilton, 1880.

Their Lardine Machine Oil was used, by authority of the Association, on all the machinery at both Fairs during the four weeks, and proved a very superior oil.

**NORTHEY'S STEAM PUMP WORKS**

BOILER FEED PUMPS,  
 AIR AND CIRCULATING PUMPS,  
 STEAM FIRE PUMPS,  
 WRECKING PUMPS.



MINING PUMPS,  
 PUMPS SPECIALLY ADAPTED FOR OIL PIPE LINES,  
 CITY WATERWORKS.

No. 47 KING WILLIAM STREET,

SEND FOR CIRCULAR.

HAMILTON, ONTARIO.

**Oshawa Cabinet Company,**

**FURNITURE MANUFACTURERS**

OSHAWA.

Highest Awards and Two Silver Medals at Dominion and Toronto Exhibitions, 1870 and 1880.

RETAIL WAREHOUSES:

97 YONGE ST., TORONTO, & 447 & 449 NOTRE DAME ST., MONTREAL

**GALT FOUNDRY & MACHINE SHOPS**

**COWAN & Co.**

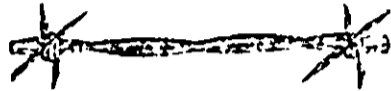
Iron Foundry and Manufacturers of all kinds of **WOOD WORKING MACHINERY**, with all the

**Steam Engines and Boilers**

PORTABLE AND STATIONARY.

Our REVOLVING BED MOULDING MACHINE stands unrivalled, and has never yet been

**BURNELL'S**



FOUR-POINTED GALVANIZED STEEL BARB WIRE FENCING.

There are now before the public a number of Four-Pointed Barbs, which to the casual observer, are similar in appearance to the Burnell Barb which we are making, but a close examination of them will show the difference and their inferiority.

The Grand Trunk Railway Company of Canada give it a preference over all others, and have contracted with us for over one hundred tons of fencing for immediate delivery.

This Barb was patented in the United States in 1877, and is no infringement on any other patent, and we will defend dealers and consumers against the threats of pretended monopolists. We claim superiority for our Barb Wire over all others for the following reasons:

- 1st.—We use only the best quality of Galvanized Annealed Steel Wire.
- 2nd.—The two strands of No. 12 Wire are twisted together just enough to allow for the contraction and expansion of the metal, caused by heat and cold, and not so much as to injure the texture of the steel.
- 3rd.—The Barbs on our Wire are four-pointed, thus always presenting a Barb laterally or at a right angle, which is a great advantage over the Two-Barb Wire, as cattle are unable to get against the fence to break it or push it down.
- 4th.—The Barbs are fastened to the Wire at intervals of 7 inches, in a manner entirely different from any other, being securely locked around and between both wires, so that they cannot slip or move toward each other, and they also prevent the untwisting of the cable should either wire get broken.
- 5th.—The machinery by which the Barbs are put on is so perfect that the Cable Wires are not injured or weakened by the process, as is the case with other Four-Pointed Barb Wire.

Manufactured by the CANADA WIRE COMPANY, Montreal.  
 H. R. IVES, Manager

**Shurly & Dietrich**

(Established 1873.)



MANUFACTURERS OF  
 CIRCULAR AND CROSS-CUT SAWS,  
 PLASTERING TROWELS, ETC.

GALT, . . . . ONTARIO.

**DUNDAS COTTON MILLS CO.**  
 DUNDAS, ONT.

MANUFACTURERS OF  
 GREY DOMESTICS,  
 TICKINGS, DENIMS,  
 CHECKED AND STRIPED SHIRTINGS  
 COTTON BAGS,  
 WARPS, YARNS, ETC.

The productions of these mills continue to have a deserved high reputation in the trade. The proprietors are determined to maintain the quality of unsurpassed excellence they have heretofore held.

**DOMINION CARD CLOTHING WORKS**

YORK STREET, DUNDAS,  
 W. R. GRAY, Proprietor.

MANUFACTURERS OF A DESCRIPTION OF  
 Card Clothing and Woollen Mill Supplies

DANWELL HOUSE, COBURN. The hotel is in the centre of the town, next to Town Hall and close to Post Office (terms \$1 per day). Commodious sample rooms. (5)

STENCIL PLATES,  
 STEEL STAMPS for marking tools, etc.,  
 STAMPS AND SEALS of every description.

Pritchard & Mingard,  
 SPARKS STREET, MONTREAL.

SEND FOR ESTIMATE.

**BRAYLEY & DEMPSTER**

MANUFACTURERS OF  
**WROUGHT IRON AND SADDLERY HARDWARE**

SCREW & STRAP HINGES A SPECIALTY

47 & 49 King William St.  
 HAMILTON, ONT., CANADA

**PORTER & SAVAGE TANNERS**

AND MANUFACTURERS OF  
 LEATHER BELTING, FIRE ENGINE HOSE, HARNESS,  
 MOCCASINS, LACE, RUBBER AND  
**OAK SOLE LEATHERS.**

436 VISITATION STREET, MONTREAL

**Metal & Rubber Stamps**

**KENYON-STEWART MFG. CO.**  
 Manufacturers of the greatest variety of Brass, Steel, and  
 Rubber Stamps, Seals, etc., etc.  
 Awarded Bronze Medal at Toronto Industrial Exhibition,  
 1880. Office and Manufactory:  
 36 KING STREET WEST, TORONTO

**DOMINION ORGANS & PIANOS**

THE largest and most complete factory in the Dominion  
 140 x 100  
 Highest honors ever awarded to any Maker of Organs and Pianos

- 1st Medal and Diploma at Centennial, 1876
- 2nd Medal and Diploma at Sydney, Australia, 1877
- 3rd Gold Medal at Provincial Exhibition, Toronto, 1880
- 4th Highest award at Industrial Exhibition, Toronto, 1880

We are now manufacturing Square and Upright Pianos Best in the market.  
 Correspondence solicited. Send for Illustrated Catalogue Free.

**Dominion Organ Company**  
 BOWMANVILLE, ONTARIO.

**WIRE ROPE.**

ROUND and flat hoisting ropes of best grades of iron and steel. Charcoal iron transmission ropes and pulleys.

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**B. GREENING & Co.**  
 Hamilton, Canada.

**ANILINE DYES,**

From the celebrated manufacturer  
 MR. K. OEHLE, AT OFFENBACH O. M., GERMANY

The Trade supplied at MANUFACTURERS' PRICES through the Agency in Canada.

**Emil Thourct & Co.**  
 MONTREAL.

WINDSOR HOTEL, NEWCASTLE. Proprietor. New house and new furniture.